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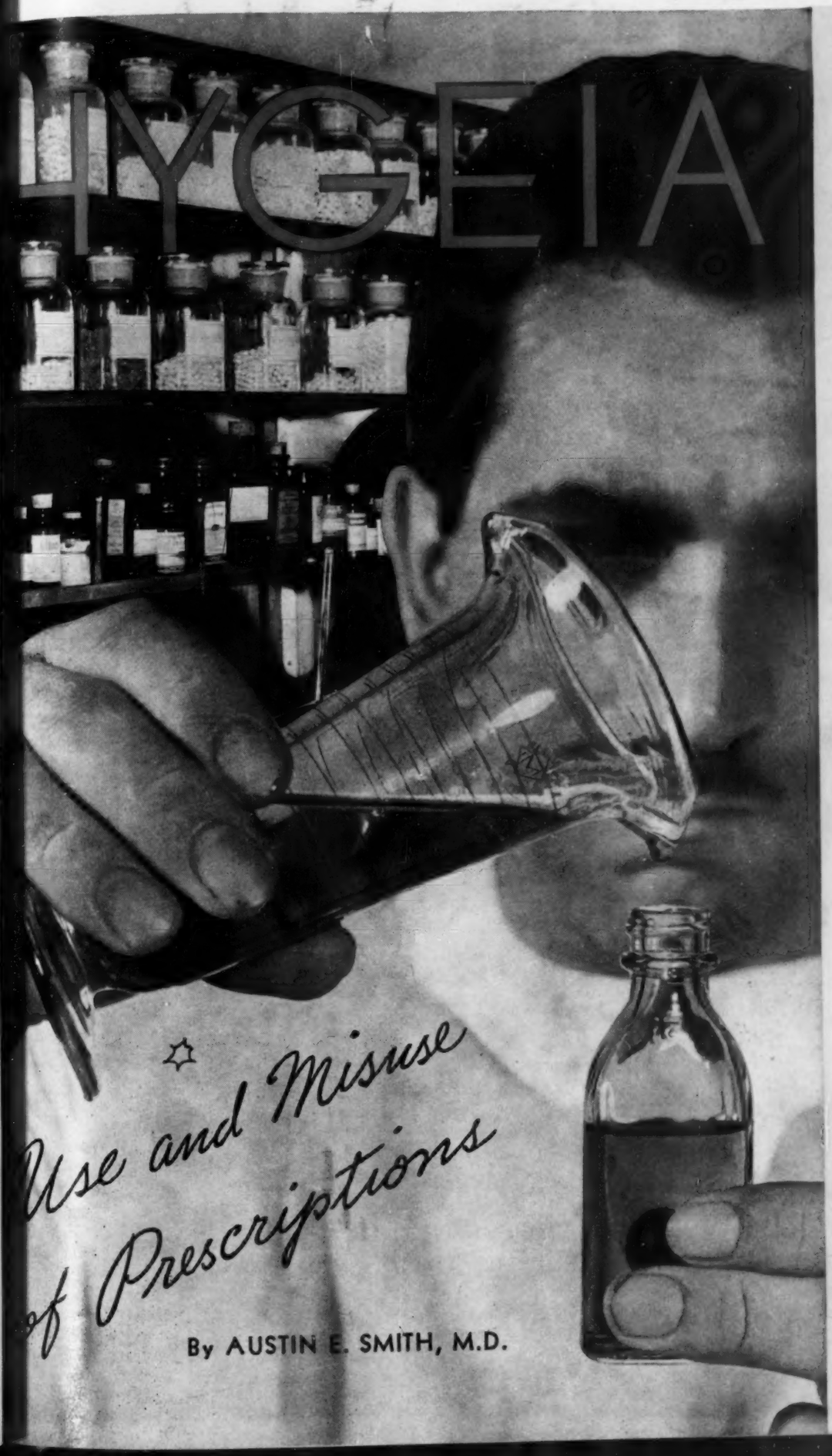
THE HEALTH MAGAZINE

THE AMERICAN MEDICAL ASSOCIATION



Use and Misuse of Prescriptions

By AUSTIN E. SMITH, M.D.

JUNE

1943 - 25c

★

ANEMIA
By William Dameshek, M.D.

NUTRITION IN PREGNANCY
By Dolores F. Moore

POISON IVY
By R. H. Rulison, M.D.

FACTS ABOUT UROLOGY
By Maurice Meltzer, M.D.

GOLDBRICKS
By Will O'Neil

ANTIVIVISECTION
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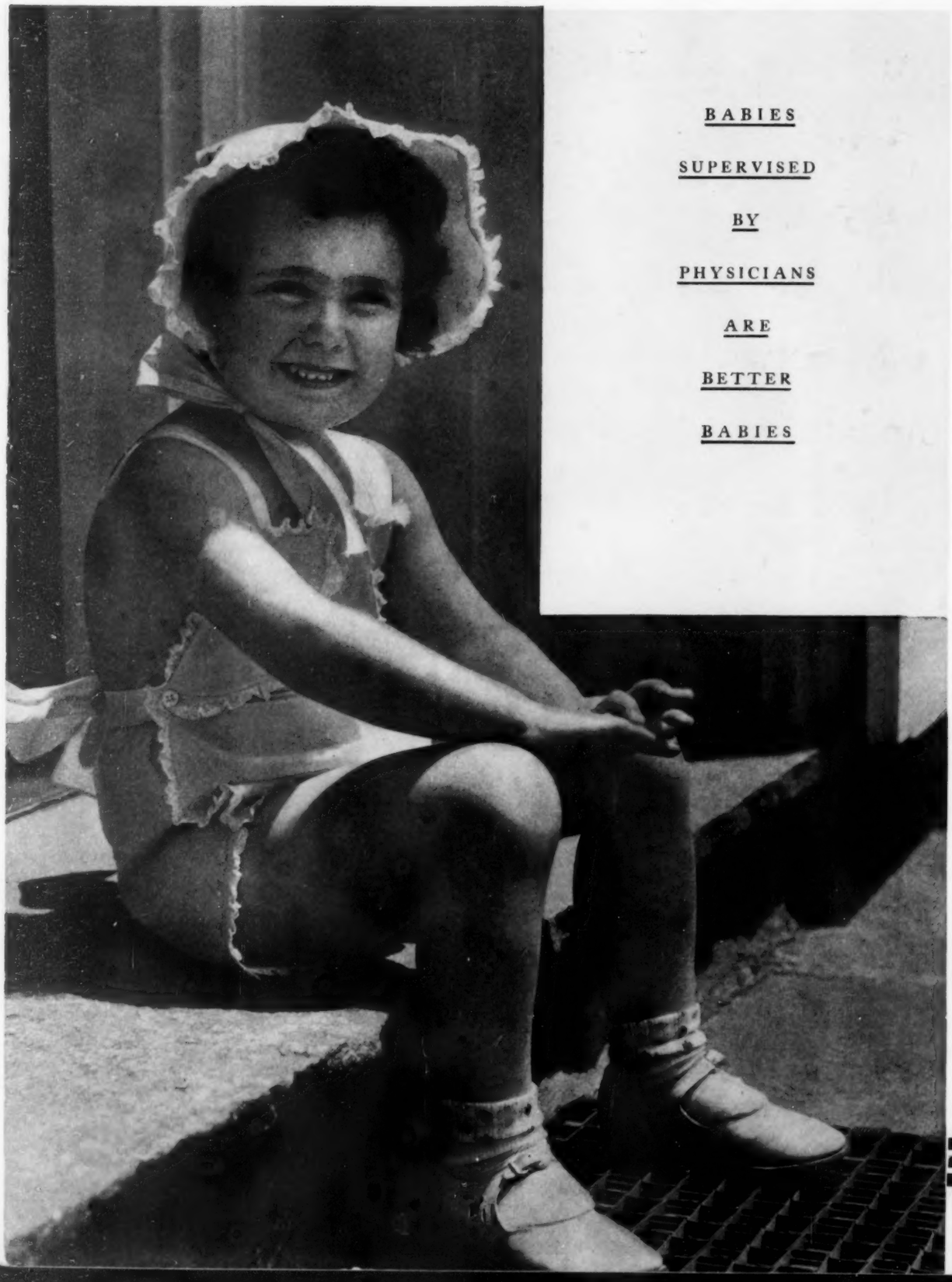

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THE HEALTH MAGAZINE

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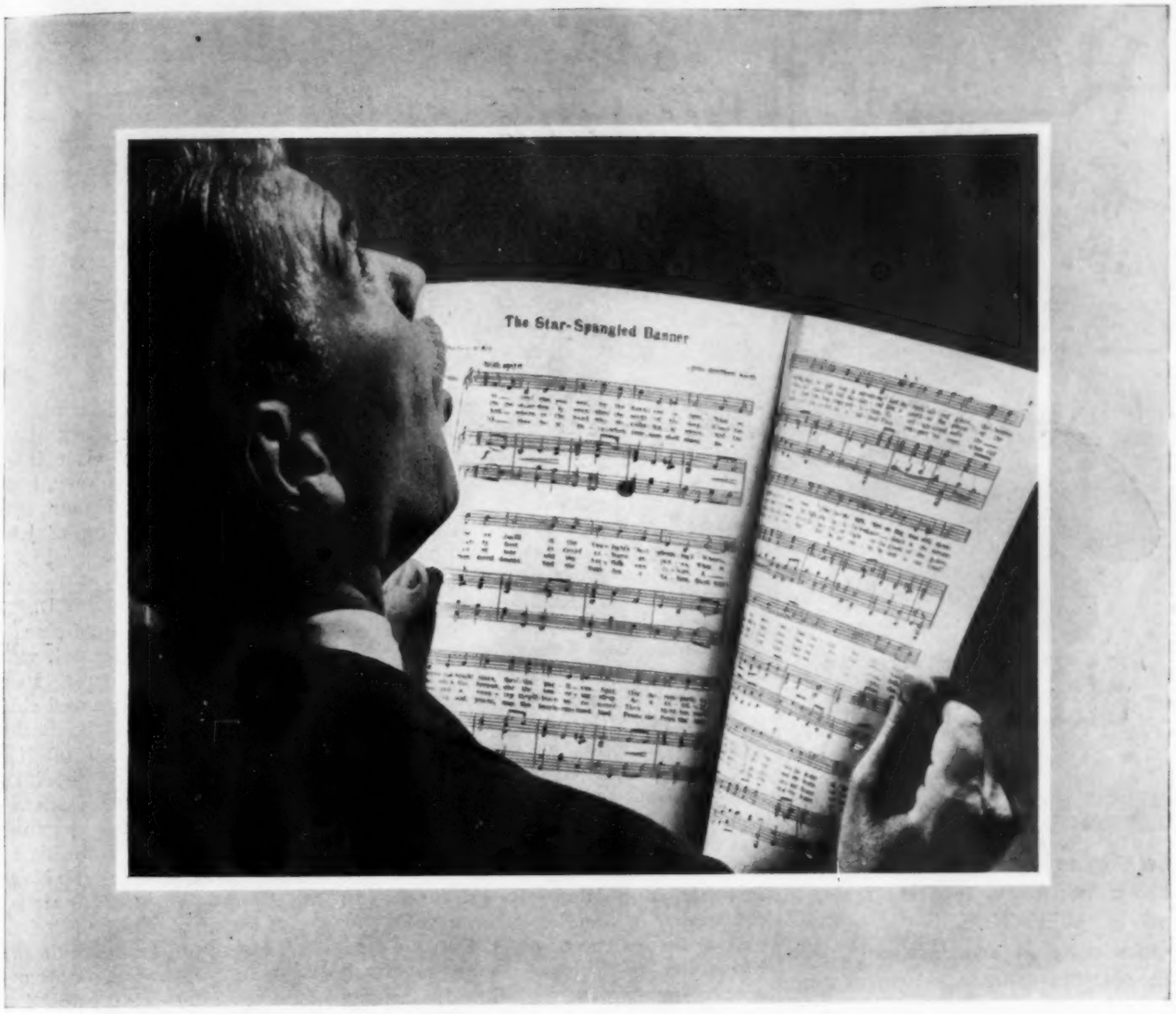
What can a man believe in?

You stand in the audience, eyes uplifted, singing at the top of your lungs. All around you, friends and neighbors.

Suddenly you falter. The others falter also. The burst of song that had begun to swell into a wave of patriotic fervor dies down to an uncertain murmur.

You no longer feel quite so patriotic. You feel abashed.

May we be forgiven if we offer a simple wartime suggestion? It's this: Shut yourself up in your room for five minutes and commit to memory *all* the words of, at least, the first verse of "The Star Spangled Banner."

And these from the fourth stanza:

"Then conquer we must, for our cause it is just,
And this be our motto: 'In God is our trust.'"

These are words immortal. Learn them. Sing them. Let the whole world know you believe in them!

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Rx

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Even if one leg is *as much as an inch and a half longer* than the other, a pair of "ELEVATORS" Shoes with the inner ramp *in one shoe only*, will conceal the unevenness in your gait . . . "confidentially." These special "ELEVATORS" Shoes are matched, look like any other fine quality shoes, and are made to order to your specifications. Even if the difference is in the size of your FEET, you can get a pair of "ELEVATORS" to fit *each* foot. This service is available only on styles 901, Black and 902, Brown (Illustrated).

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Who's Who IN HYGEIA

DOLORES F. MOORE, now a teacher of home economics at the Sumner High School, Kansas City, Kan., is either a reformed or renegade musician—according to what one may conceive to be the comparative values of voice and vitamins. At any rate, she was graduated from the Englewood High School, Chicago, with distinction in both music and home economics and sought for a while to carry water on both shoulders by attending the Chicago Musical College and studying dietetics at Lewis Institute. As it turned out, however, there weren't enough hours in the day, and in a close decision, music lost out.

After graduating from Lewis Institute, Miss Moore taught home economics in the South for a year or two before she went back to the University of Chicago for a year of graduate work with Dr. Lydia Roberts. She received the M.S. degree in 1940, and shortly after commencement she was called to Kansas City for an interview with the superintendent of schools. This conference resulted successfully in spite of the fact that she arrived at the superintendent's office hatless and breathless, having left on the train a new hat which she bought for the express purpose of making a good impression!

Among other things, Miss Moore today is teaching foods to a class of 130 high school girls; managing the school cafeteria, which serves 800 students daily; teaching the Red Cross course in nutrition to several groups of adults and selected volunteers from among her high school students; interpreting point rationing rules for Kansas City housewives; and writing nutrition articles for the local newspapers and for various home economics journals. Her article on page 418 of this issue of HYGEIA grew out of a study she undertook during the course of her graduate work at the University of Chicago. Her interest in diets during pregnancy, however, is professional rather than personal: She's thinking of joining the WAACS.

WILLIAM DAMESHEK, M.D., is clinical professor of medicine at Tufts College Medical School, visiting physician at the Pratt Diagnostic Hospital in Boston and chief of the Blood Clinic at the Boston Dispensary. A graduate of Harvard University Medical School, Dr. Dameshek has published numerous articles in professional journals, chiefly having to do with his investigations of diseases of the blood. In addition to medical practice, teaching, lecturing, writing and research, his interests include the study of Boston history, antiques, and modern American music. As a result of this diversity of interests, he often finds himself poring over a map of colonial Boston or writing a serious treatise on "Hemolytic Syndromes" to an accompaniment of boogie-woogie. He can't explain why, but he finds this less distracting at such times than symphonies. HYGEIA readers will just have to take Dr. Dameshek's word for it that "Anemia," on page 432, was composed to the strains of swing.

MAURICE MELTZER, M.D. ("Facts About Urology," page 414) is director of the department of urology at the Downtown Hospital and the Pan-American Clinics in New York City. He is a graduate of New York University Medical College in the class of 1912, a member of the American and Pan-American Medical Associations and the American Urological Association. For the past twenty-five years, Dr. Meltzer has been contributing articles on

(Continued on page 408)

You wouldn't think of buying "peddler's specs" . . . or choosing ready made glasses from a "try-on" tray. "Of course not," you agree. "My eyes are far too precious to risk with lenses like *that!*"

Yet that's the risk thousands of people take each summer when buying ordinary counter-card sun glasses —forgetting that "lenses like *that*" may frequently be harmful to the eyes.

Especially if you don't wear glasses every day, it pays to be sure that sun glasses give your eyes complete protection—not only against glare, but against the tiring, dangerous strain of blown or pressed lenses with their minute imperfections. If you do wear glasses, you'll certainly want your prescription in a darker shade.

ASK FOR SPORT SHADE SOFT-LITE LENSES IN THE NEW SPORT-LITE FRAME

Sport Shade Soft-Lite Lenses are ideal for summer wear—just as the lighter shades are for every day use. Scientifically designed to filter glare, they do so without changing color values, while giving your eyes the added protection of highest quality ophthalmic lenses made by Bausch & Lomb. They are sold in reputable optical establishments, ground plano (no correction) or to prescription, and fitted into any style frame you choose. Try a pair this summer for keener sight and greater outdoor comfort.

AMERICA NEEDS YOUR EYES

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Does your mirror reflect a complexion as lovely as you would like it to be?

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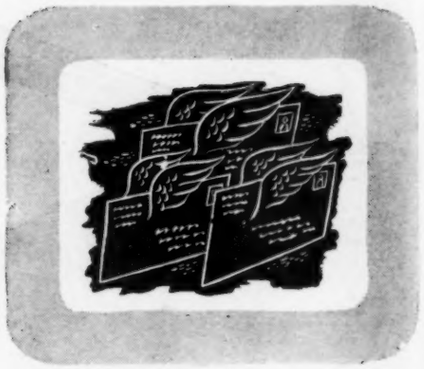

Cover Girl

To the Editor:

Is that Frances Farmer on the front cover of the April issue of HYGEIA or isn't it? I've searched through all the pages of this issue but I can't seem to establish this girl's identity. I am aware that F. F. is a movie actress and has recently made news by some escapades but I didn't know that she had joined that group of girl celebrities who identify themselves as "cover girls."

I'd almost bet that it is the inimitable Miss Farmer. However, I would welcome an affirmation or verification from you.

Salem, Ind. O'BRIEN O. MEADORS

No.—ED.

Likes Large Print

To the Editor:

This was my first acquaintance with HYGEIA, and I am more than pleased. I like especially the large, comfortable print which is used. I am a graduate nurse, and HYGEIA keeps me up on things.

Since I have been married I have organized a sort of one-woman campaign to get my friends to feed their children well balanced diets and keep them on a routine. They sigh and say it is too much work; I am afraid the mothers who really should read HYGEIA are the ones who need instruction the most.

Yours for more articles on new findings in the medical field.

Harvey, Ill. MRS. H. J. PETERSON

Learned Little

To the Editor:

Recently I filled out a subscription blank for HYGEIA with the understanding that after examining a copy I could cancel my subscription if I so desired. I received a copy of your magazine and after looking it over I do not feel that I wish to continue my subscription.

I feel that many of its articles are rather poorly written because of the purpose that the articles must serve. For instance, in the article "Myopia" entirely too much space was devoted to building up the reputation of the eye physician with the result that the reader learned very little about nearsightedness. This is but one example of why I do not feel that I care to spend my money for HYGEIA.

Philadelphia, Pa. RICHARD A. PRICE

Why Not?

To the Editor:

Every now and then I wonder if we should not place HYGEIA on our list of educational material to offer to nurses, health education instructors and home economics teachers—since they are now requesting it through similar sources. For this reason I like to keep up with the publication. MARION P. MORRIS

Educational Department
Bristol-Myers Company
New York City

Extras

To the Editor:

I have received two copies of the last issues of HYGEIA, by error.

I know that there is a demand for this magazine and would be glad to return the extra issues if you wish. If not, I can pass them along to a friend of mine who is a registered nurse and enjoys HYGEIA as much as I do. LILLIAN J. GOSS

Beverly, Mass.

We're glad to have HYGEIA *passed along to new readers, but we're glad to get extra copies back, too—recent issues have been completely sold out.*—ED.

One part of the card is kept by the patient—another part is provided for the physician's files.

"I feel so much SAFER now the Children are Protected!"

Ask your doctor for this valuable Immunization Record Card

It's a *real protection* to have an accurate, written record of *what* diseases your children have been immunized against—and *when*.

So ask your physician today for the helpful, convenient, unique Immunization Record Cards supplied to the medical profession by Sharp & Dohme. Get one for each of your children, and keep them in a safe place.

Especially in wartime, many emergencies are apt to arise in which it could make the difference between health and serious illness to have this written record . . . instead of depending on guesswork.

What's more—the cards serve as a *reminder* to take the proper steps in the future—to keep your children's protection *up-to-date!* Far too many mothers—according to a Roper survey—fail to do this. So get these cards today. They're a real health safeguard.

Sharp & Dohme
PHILADELPHIA

IF YOUR CHILD IS—

A baby—his first vaccination for Smallpox should be given when he's 3 months to a year old . . . his first immunization against Diphtheria before the end of the first year. Your physician may also recommend immunization against Whooping Cough—which causes many *deaths* among children under 5 years old!

At 18 months to 2 years—many physicians advise immunization against Scarlet Fever, Typhoid and Tetanus. Ask your own doctor.

At 6—*re-vaccination* against Smallpox is advised . . . and your child should be Schick-tested for Diphtheria.

Around 12—children should again be re-vaccinated and Schick-tested.

IMPORTANT NOTE FOR ALL AGES! If your child did not receive the protection he should have had at an *earlier* age, see your physician immediately and have him immunized *now*.

DIAPERS... DIAPERS
WHO'S GOT DIAPERS?

ALMOST three million young hopefuls born in a year. Sending three million proud mothers off on the biggest diaper-hunt in history. Will there be enough for your baby? Surely, if you and all mothers follow this "good-sense, good-neighbor" plan:

1. When you buy new diapers, get the adjustable kind (like CHIX) that fold to fit any size baby. Avoids buying wasteful extra sizes.
2. Get diapers that are soft yet sturdy enough (like CHIX) to outlast the complete diaper period. Saves making additional purchases.
3. When your baby graduates, pass the diapers along to some grateful friend.
4. Are your children grown up? Look through their old baby clothes today for diapers. Pass them along to a newcomer.

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Air-cushioned
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Heavenly-soft, specially-woven gauze, CHIX are extra absorbent, protect against chafe. Easy to wash—quick drying. Send for FREE booklet, "Common Sense in Dressing Baby," by a well-known authority. Chicopee Sales Corp., 40 Worth St., New York, N. Y.

COMING IN hygeia

RURAL ELECTRIFICATION AND COMMUNITY HEALTH
By HARRY SLATTERY

The U. S. Rural Electrification Administrator tells what the federal program has done for health.

BRING YOUR FIRST AID UP TO DATE
By E. O. NICHOLS Jr., M.D.

Yesterday's first aid methods won't do today. Dr. Nichols gives up to the minute tips on what to do when.

BABIES BORN WITH HEART DISEASE
By ROBERT H. FELDT, M.D.

There are thousands of victims of congenital heart disease in the U. S. Yet the outlook for these babies is not too dark. Dr. Feldt tells why.

ARE YOUR EYES RED?
By JAMES W. SMITH, M.D.

Conjunctivitis is a nagging, painful, persistent disease. Dr. Smith describes it and tells how to avoid it.

NUTRITION IN INDUSTRY
By ROBERT S. GOODHART, M.D.

Improving nutritional status is an important objective of industrial health—and it can be and is being done!

DOCTORS' WIVES ORGANIZE FOR WAR SERVICE
By R. M. CUNNINGHAM Jr.

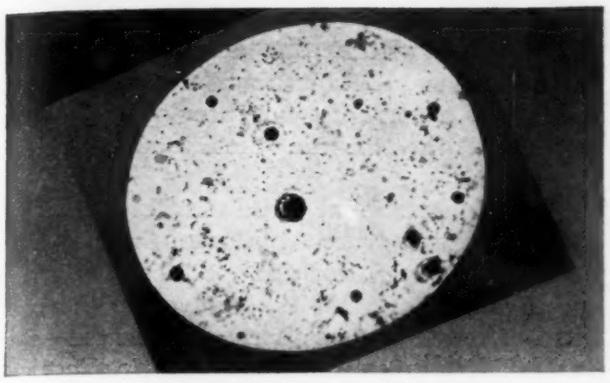
In the Old South, the Doctors' Aide Corps is performing valuable service to relieve the shortage of doctors.

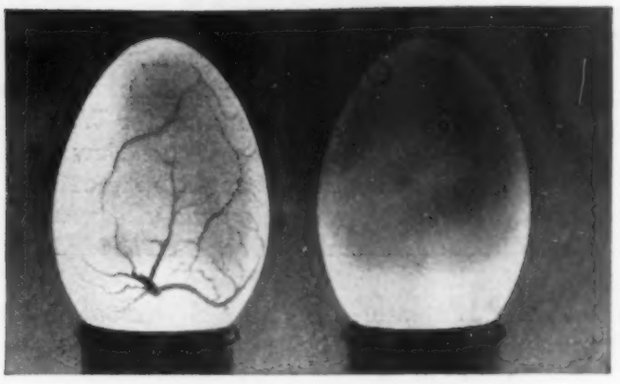
Other timely articles on health and medical subjects are coming up in HYGEIA's new wartime schedule.

Who's Who (Continued from page 404)

genito-urinary diseases to medical journals. His article in this issue of HYGEIA classifies the principal ailments of the kidneys, bladder and urethra and tells how specific disease in this region is diagnosed by the urologist.

Other authors in HYGEIA this month are: WALTER F. PERKINS, vice president and general manager, Bartlett Hayward Division, Koppers Company, Baltimore, Md.; R. H. RULISON, M.D., dermatologist practicing in New York City; RUTH BECKEY, Ph.D., director of the speech clinic at Ohio University, Athens, O.; FREDERICK M. ALLEN, M.D., professor of internal medicine, New York City; WILL O'NEIL, science writer for the Chicago *Sun;* and BARBARA K. NEWMAN, director of physical training for girls at Gould Academy, Bethel, Me.





TYPHUS, EGGS, AND SOLDIERS

IN THIS WORLD WAR, our soldiers confront an ancient foe even more deadly than the enemy's modern panzer divisions.

That foe killed between two and three million people in World War I. It is typhus fever—a disease transmitted by the bite of the body louse, and often confused with typhoid fever because of the similarity of names.

Today our troops are immunized against typhus. They are among the first troops to be so safeguarded in the history of the world.

Such mass protection is a striking and dramatic medical triumph, yet it hinges upon a most prosaic thing—a hen's egg.

For, in the preparation of the new vaccine against typhus fever, hens' eggs play a stellar role.

You would see these eggs at work if you were to visit the laboratories of Parke-Davis, where vials of typhus vaccine are being produced by the thousands.

In closely guarded and isolated rooms, there are great trays of these eggs. Each is fertile. Each is allowed to incubate for a time.

Then, a tiny hole is carefully drilled in one end of each egg. Live typhus fever virus is injected through this opening.

The live virus multiplies many times over. The picture of the two transilluminated eggs above shows the difference between an egg before the injection (left) and an egg teeming with typhus (right). When the virus has grown sufficiently in the egg embryo, it is "harvested" and killed.

Yes, killed with chemicals, for it is *dead* typhus fever virus that forms the basis of the vaccine which is used to protect our armed forces against typhus fever.

• • •

Typhus vaccine is only one of the life-saving weapons produced in our laboratories. Here are prepared the modern safeguards against those age-old killers—smallpox, tetanus, typhoid, diphtheria. Here, also, are produced dried blood plasma . . . sulfa compounds . . . and hundreds of pharmaceuticals that doctors use to alleviate pain and speed recovery.

In today's war-torn world, products for saving lives are fulfilling a vital function at home and abroad. These products will be equally ready to help and protect millions of human beings in the days of peace to come.

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PHARMACEUTICALS • BIOLOGICALS • SURGICAL DRESSINGS

POSTWAR MEDICAL SERVICE

AN EDITORIAL

ON MARCH 15 under the auspices of a number of medical organizations and representatives of medical industries, a National Conference on Planning for War and Postwar Medical Services met in New York City. All the papers presented on that occasion are published in *The Journal* of the American Medical Association for May 1, 1943.

Lt. Col. Thomas T. Mackie discussed "War and the Migration of Tropical Diseases" and indicated some of the possible effects of the war in spreading into northern areas conditions which have never previously been a threat. The effective control and treatment of tropical diseases are vital to the future safety of all the peoples of the temperate zone. Millions of combatants have been amassed in Africa, the Near East, Burma, China and the islands of the South Pacific. When these men are demobilized and return to their homes many of them may carry foreign infections into areas in which such infections have not previously been endemic. The tremendous developments in aviation and the transport of men and supplies is also an obvious means for transplanting disease into new areas.

Following World War I the influenza epidemic occurred which devastated the world. In a period of six months twenty million people died; 548,000 in this country alone. Prof. Thomas Francis Jr. indicated in the National Conference that the threat of a recurrence of this epidemic is an actual one. Conditions which followed World War I, recurring, might give impetus to a new epidemic of respiratory disease. Thus he says, "The eruption of such a strain would find conditions for dissemination highly satisfactory by virtue of the speed of travel and the massing of groups of individuals presumably more susceptible because of their relative freedom from disease in recent years."

The menace of malaria now faces the world as never before in history. As Surgeon General Thomas Parran pointed out, "Outside of the mental diseases there is no other disease of comparable importance against which we have made less progress." Malaria is one of those diseases that follows wars, invading the homes of returning soldiers. Prof. Lowell T. Coggeshall calls malaria the outstanding hazardous medical problem of the current and postwar periods. True, methods of prevention are known and potent drugs are available, but the application of what we know is exceedingly costly and the nature of the disease makes it especially difficult to control. Of the greatest importance will be the decision to meet at once each small outbreak of malaria that may occur in a territory not previously invaded, with all the technic that modern science provides.

The International Food Conference which met in May was a recognition of the innumerable economic, social and political factors, as well as medical factors, involved in the problem of nutritional diseases. Already there are many sections of the world confronted with actual starvation and others with definitely increased nutritional deficiencies. Prof. John B. Youmans told the National Conference on Planning for War and Postwar Medical Services that deficiencies must be accurately assessed if they are to be properly controlled. The assessment determines the kind of deficiency, its severity, and the number of persons affected in various classes of the population and many similar factors. The postwar world will require a long range program of nutritional betterment. In many places the war has already served to draw public attention to the nutritional problem and, indeed, to bring about improvement. Thus in England certain definite gains in nutrition of the general public seemed to have been secured because of the war. It would be unfortunate if the interest thus far stimulated should be allowed to lapse in the postwar period.

Following World War I, the problem of the disposition of vast quantities of medical supplies and of the utilization of the increased productive facilities was not satisfactorily met. Masses of unstandardized and spoiled materials were thrown on public auction. Push-cart salesmen sold ligatures and ointments. Even narcotics were tossed into methods of distribution which resulted in their appearance in illegal traffic twenty years after the war had ended. This problem of materials was presented by Col. Charles F. Shook of the Army Medical Corps.

President Edward C. Elliott of Purdue University, representing the War Manpower Com-

mission, indicated the importance of universal military training, of the expansion of training facilities for the medical profession and other trained personnel and of improved technologic training necessary to meet the needs of the postwar world as well as the needs of World War II. President Elliott felt that all forms of higher professional and technical education are to gain something through their war experiences. We are being taught to do more and more with less and less and in a shorter than ever period of time. The results of such experiences should not be lost.

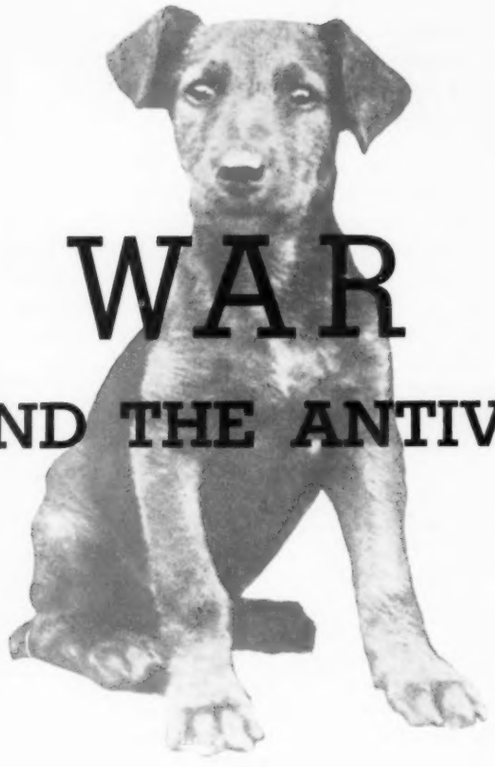
Trained scientific research was the topic of Prof. A. R. Dochez of Columbia University College of Physicians and Surgeons in New York. The contribution by the National Academy of Sciences, the Division of Medical Sciences of the National Research Council, and the Committee on Medical Research of the Office of Scientific Research and Development to the medical care of the armed forces has been a tremendous one. Standardization of procurement of blood donors and of preparation of blood plasma, developed with the cooperation of the American Red Cross, is one of the outstanding accomplishments of the war period. A recording of new efforts in the field of research indicates how greatly the emergency has sharpened our vision and "dynamized" our energy in this critical period.

At the evening session some of the health problems were considered by Mr. Frederick P. Keppel of the Carnegie Foundation. Mr. R. F. Allen, vice chairman of the American Red Cross, told of his recent experience in North Africa and of the contribution made by the American Red Cross to the war effort. Huge quantities of medicines and hospital supplies have been sent to Great Britain, Russia, China, the Middle East, Belgium, Norway, Yugoslavia and Greece. The Red Cross has remained the only dependable contact with the enemy in meeting the needs of unfortunate peoples, of war prisoners, and of the wounded. In the postwar period the responsibilities of the Red Cross will be even greater than now.

Mr. Nelson A. Rockefeller, coordinator of Inter-American Affairs, outlined briefly the campaign against disease in Latin America which is part of the program of his agency. He said:

> The campaign against disease must be a rounded program. Disease germs are not isolationists. They move about more freely now with the development of highways and airports. For example, the death dealing gambia mosquito which ravaged northern Brazil was brought to this hemisphere by airplane from Africa. Inter-American transport by highway and air will be greatly accelerated after the war and will increase the need for our cooperation in the war on disease.
>
> The battle against malaria is being fought under the most difficult conditions. In some places work is being done along thousands of miles of riverfronts. In others, supplies have to be carried over the Andes by airplane, motor truck, canoe, pack mule and even on the backs of men to medical outposts. To get construction materials, it has been necessary in some places to erect brick kilns and saw mills. In Guayaquil the ingenuity of doctors and engineers produced one hundred beds for the hospital out of twisted wire and old pipes.
>
> Doctors and sanitation engineers of the Americas toil through jungles, navigate swift mountain streams on balsa rafts and live for weeks and months in forests far from the comforts of home. The war they are waging against disease is essential to victory and a vital part of the total war effort.
>
> Disease and hunger are twins, born of the same conditions. They are twin problems in the vast Amazon country as in other places where development of strategic materials is under way. Brazil is moving fifty thousand additional workers for rubber production into the Amazon. The new workers must be fed as well as protected against disease.
>
> By their own initiative the physicians of this country will have offered to the nation by 1944 the services of more than fifty thousand doctors (more than one third of all the active practitioners available in this country) to meet the nation's needs in time of war. By their own initiative they seek to give to the postwar world the most that American medicine can give for the restoration of the peoples of the world to health and physical fitness. They do not hesitate in offering themselves; they have been trained in the traditions of American medicine, which say to the doctor: "A profession has for its prime object the service it can render to humanity. . . . The practice of medicine is a profession."
>
> No greater task has ever confronted the physicians of America than the part they will be asked to play in the planning of medical services for the postwar world. They will meet that obligation as they have met every other call placed on them in the past—voluntarily, bound only by the traditions of their great profession, uncompelled by any arbitrary mechanism such as that founded by totalitarian governments to enslave both their people and the physicians who served them.

Dr. Morris Fishbein, editor of *The Journal* of the American Medical Association and of HYGEIA, indicated the specific nature of some of the postwar problems and the demand for cooperative action in meeting them. Especially important, he thought, was the trend of American medical practice and the modifications of that trend by lessons learned from the war and by the establishment of a new international point of view. Already *(Continued on page 472)*



WAR AND THE ANTIVIVISECTION RACKET

By FREDERICK M. ALLEN

MOST FATALITIES in war have not been caused by wounds directly penetrating the brain, heart or other vital organs. By far the chief causes of death are infection, hemorrhage and shock. People who read of victories or defeats rarely stop to realize that these rest fundamentally on scientific research and that great, government-supported investigations in many branches of physics and chemistry give origin to the improved weapons without which even the bravest soldiers and sailors are helpless. Likewise, the public limits its ideas of military medicine to the direct services of doctors and nurses, without much thought to the laboratory research which gives them weapons to use against these principal enemies, infection, hemorrhage and shock.

The Assyrian who "came down like the wolf on the fold" was destroyed by one of those epidemics which from time immemorial have ravaged multitudes of men assembled in military camps. Even as late as the Spanish-American war of 1898 the rule still prevailed that more soldiers died from disease than from battle. As long as the cause was attributed to displeasure of the gods, or the malign influence of a planet or comet, or (in primitive medical theories) to miasms or bad air, nothing could be done to guard against these pestilences. When laboratory science and animal experimentation brought the amazing discovery that such diseases are caused by invisible, living germs, it became possible to gain definite knowledge of the transmission of each kind of infection by direct contagion, by contaminated water or food, or by insects or other means. With this knowledge efficiently applied, armies are now able to operate in all climates from the poles to the tropics and maintain high standards of health.

Similarly, until Lister began to apply the new bacteriologic discoveries, the scope and results of surgery were limited. Wounds were expected to form "laudable" pus, and up to the time of our own Civil War "hospital gangrene" was a virulent infection which often caused even trivial wounds to become fatal. Aseptic methods for the prevention of wound infections are now familiar to everybody. More active methods of prevention and cure rest on two basic principles.

First, when experiments showed that in many infections the blood contains newly formed protective substances which either kill bacteria or neutralize their poisons, this knowledge became the basis of serum and vaccine therapy. Thus every soldier receives a routine inoculation to immunize him against typhoid fever, and if he has wounds infected with tetanus or gas gangrene he is treated with blood serum from animals which have been immunized against these bacteria.

Second, the discovery by Ehrlich of a compound of arsenic which would cure syphilis furnished a stimulus for similar attempts with other diseases. The requirement is to find a drug which is more poisonous for the disease germs than it is for the body, or which can assist the body in overcoming them. That Ehrlich's successful product could bear the number "606" is evidence of both genius and luck on his part. As the trials run into thousands and the vast majority of drugs proved to be either useless or toxic, it is obvious that such tests must be made on animals.

There was rare good fortune when the German chemist Domagk in 1935 introduced experiments with a red dye which he thought

might have an affinity for certain germs of the streptococcus and pneumococcus type. In a series of mice artificially injected with these cocci, those treated with the dye recovered while the untreated ones died. Immediately, chemists and bacteriologists throughout the world pounced on this discovery. They broke down the molecule of the new drug and recombined the fragments in various ways, to identify the active fraction and to form new compounds which might have a still higher curative power or extend the cure to other diseases. This was the origin of the sulfonamide drugs, which have miraculously reduced the death rate from pneumonia and other civilian diseases and have also proved so potent for preventing or curing wound infections that they are included in the first aid kit of every soldier. At Pearl Harbor and on many European battlefields these drugs have saved many lives under conditions which would have been hopeless only a few years ago.

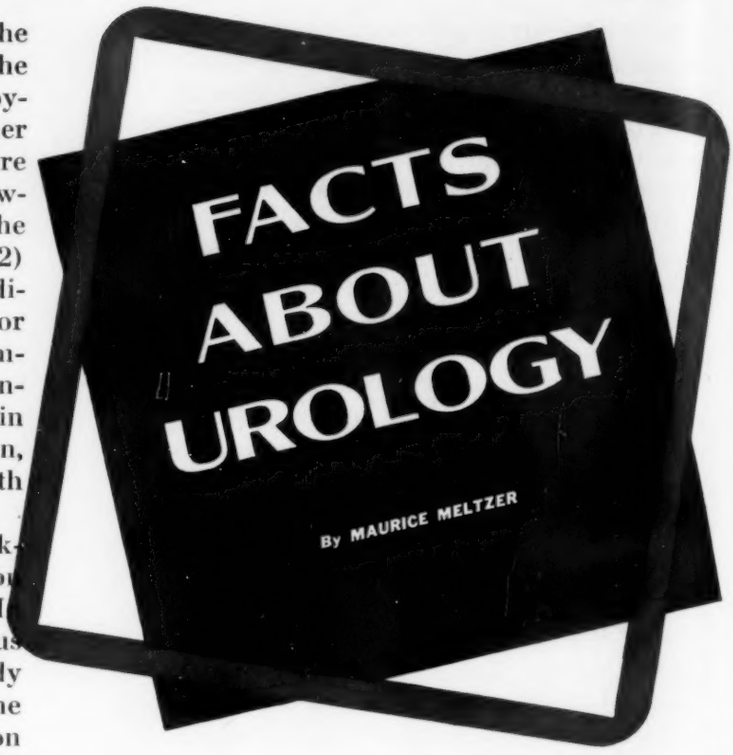
Hemorrhage is such a simple condition that everybody can readily understand its treatment by transfusion to replace the lost blood. But when it comes to a choice between the red corpuscles, which give the blood its color and carry oxygen, and the clear plasma in which they are suspended, most persons would theoretically give preference to the corpuscles. Experiments showed the contrary: that for saving life in an emergency the plasma is essential and the corpuscles relatively immaterial. Shock is a much larger problem than hemorrhage, but it happens that here also the highest place in treatment is held by injections of blood plasma. It is obviously unthinkable to take a long series of dangerously wounded men, especially in the rush of battle, and give half of them injections of corpuscles and the other half injections of plasma, to learn which ones die and which recover. It is a simple experiment to bleed dogs or create shock in them and get results which are precisely applicable to human patients. As it is not possible in peace or especially in war to have fresh blood or plasma always promptly available, there is an added advantage of plasma in that it can be preserved or even dried in a manner which is not possible with whole blood. Again, it is obvious that large injections of dry plasma, redissolved in water, are too risky for human treatment unless they are first proved safe in animal experiments.

Animal experimentation made possible many of the successful methods of treating war wounds that are saving soldiers' lives today

Acme

Furthermore, despite the great life-saving value demonstrated for either fresh or dried plasma, the supply of it is necessarily limited. Accordingly, an intensive search for substitutes has been and is now being made. Salt solutions, gum arabic, gelatin and proteins from animal blood or milk are among the materials tried. Since the majority of the solutions are sure to prove useless or harmful, it is again obvious that the tests must be performed on animals and not on injured human beings. If a satisfactory substitute for blood plasma can be found which can be supplied in unlimited abundance to military hospitals and staffs everywhere, it will not only obviate the need for collecting human blood on the present large scale but will also save many additional soldiers' lives. The results already obtained warrant the hope that, if the experiments can be pushed intensively enough, the desired plasma substitute may be obtained before the end of this war.

In summary, the conquest of infection and notable advances in combating hemorrhage and shock have been accomplished through animal experimentation and could not have been accomplished in any other way. No army could or would take *(Continued on page 453)*



THE PUBLIC is generally aware of the importance of laboratory analysis of the urine. When the urine of a person enjoying normal health is examined, it shows neither pus nor blood cells. Pus and blood cells are brought to one's attention in one of the following ways: (1) when they are found in the course of a periodic health examination; (2) when an observing and health-minded individual notes cloudiness, a brick red deposit or light to dark red urine; and (3) most commonly they are found because a person consults his physician regarding backache, pain in the kidney region, pain in the lower abdomen, pain in the urinary channel associated with burning, and urinary frequency.

The specialty of urology has made remarkable strides, and through its various precision tests exact diagnoses are possible today. In order accurately to ascertain the source of pus or blood in the urine, complete urologic study is necessary. Repeated analyses of the urine are made; including microscopic examination and cultures to determine the type of bacteria causing an infection. The urinary tract is examined by x-ray to note the presence of stones and the size and position of the kidneys. By injecting an opaque, or x-ray resistant, substance into the patient and taking an x-ray film, it is possible to view the entire urinary tract and to note the presence or absence of abnormalities. The urinary tract includes the ureters, or tubes leading from the kidneys into the bladder; the bladder itself; and the urethra, which is the canal leading outward from the bladder. When necessary, the interior of the bladder can be seen plainly through a cystoscope, a tubular instrument which may be inserted directly into the bladder through the urethra. By means of this instrument, fine tubes (the size of piano wire) can be passed in a way which makes it possible to collect separate specimens of urine from each kidney, and the exact function and status of each kidney can then be determined by separate tests. In case tuberculous infection is suspected, special tests are made to demonstrate the tubercle bacilli; some of the suspected urine is injected into the abdominal cavity of a guinea pig, and about six weeks later the animal is examined for evidence of tuberculosis. All these urologic tests are not only essential for the establishment of an accurate diagnosis but also free of danger to the patient.

Self treatment—particularly with the various widely advertised nostrums for "weak kidneys and bladders and for stones and gravel"—should always be avoided. These mixtures are inactive, useless preparations, high in cost, noncurative and definitely misleading. There is no scientific basis for their use, because they are recommended for conditions which have not been diagnosed. Drugs for infection of the urinary tract should be taken only when prescribed by a physician who has submitted his patient to a thorough examination.

A physician should be consulted as early as possible when symptoms are noticed in order to avoid progressive and permanent damage. Indifference and procrastination may result in such permanent damage to a kidney, for example, as to necessitate its surgical removal in order to save life and restore normal health. Removal of one kidney does not endanger health or the natural expectancy of life. Indeed, the remaining kidney is endowed with compensatory power so that, when called on, it can do the work of two kidneys. A person with only one kidney may enjoy the same good health and live as long as a person with two kidneys.

The presence of pus cells in urine indicates infection or inflammation somewhere in the urinary tract. Acute and chronic infections result from bacteria, which are usually carried through the blood stream from adjacent or remote parts of the body. About 80 per cent of urinary infections are caused by bacillus coli organisms, which come from the bowel. Another important group of bacteria—the staphylococci and streptococci—reach the urinary organs from infected sinuses, tonsils, gums and teeth. It is not commonly known that infected wounds, boils and carbuncles on any part of the body may send staphylococci and streptococci through the blood stream and cause mild or severe inflammation of the kidney. Common respiratory infections such as colds or influenza at times send their organisms to produce urinary infection. Infection by the tubercle bacillus is also a serious problem. These bacteria, also transmitted via the blood

stream, arise from previous tuberculous disease of the joints, bones, lymph glands or lungs; the disease is inactive, however, and such a person is unaware of its existence.

Certain factors favor infection of the urinary tract by these bacteria. Mechanical obstruction and the presence of foreign bodies such as stone or tumor growths in any part of the urinary tract interfere with the free and easy flow of urine. A vicious cycle results because of chronic congestion and lowered resistance to infection; often stagnant pools of urine cannot drain off and remain within a kidney or bladder. When bacteria reach these parts, they find good breeding places; secondary infection sets in and may progress to a dangerous degree. The early recognition and removal of these factors are obviously important in avoiding permanent damage to the urinary organs.

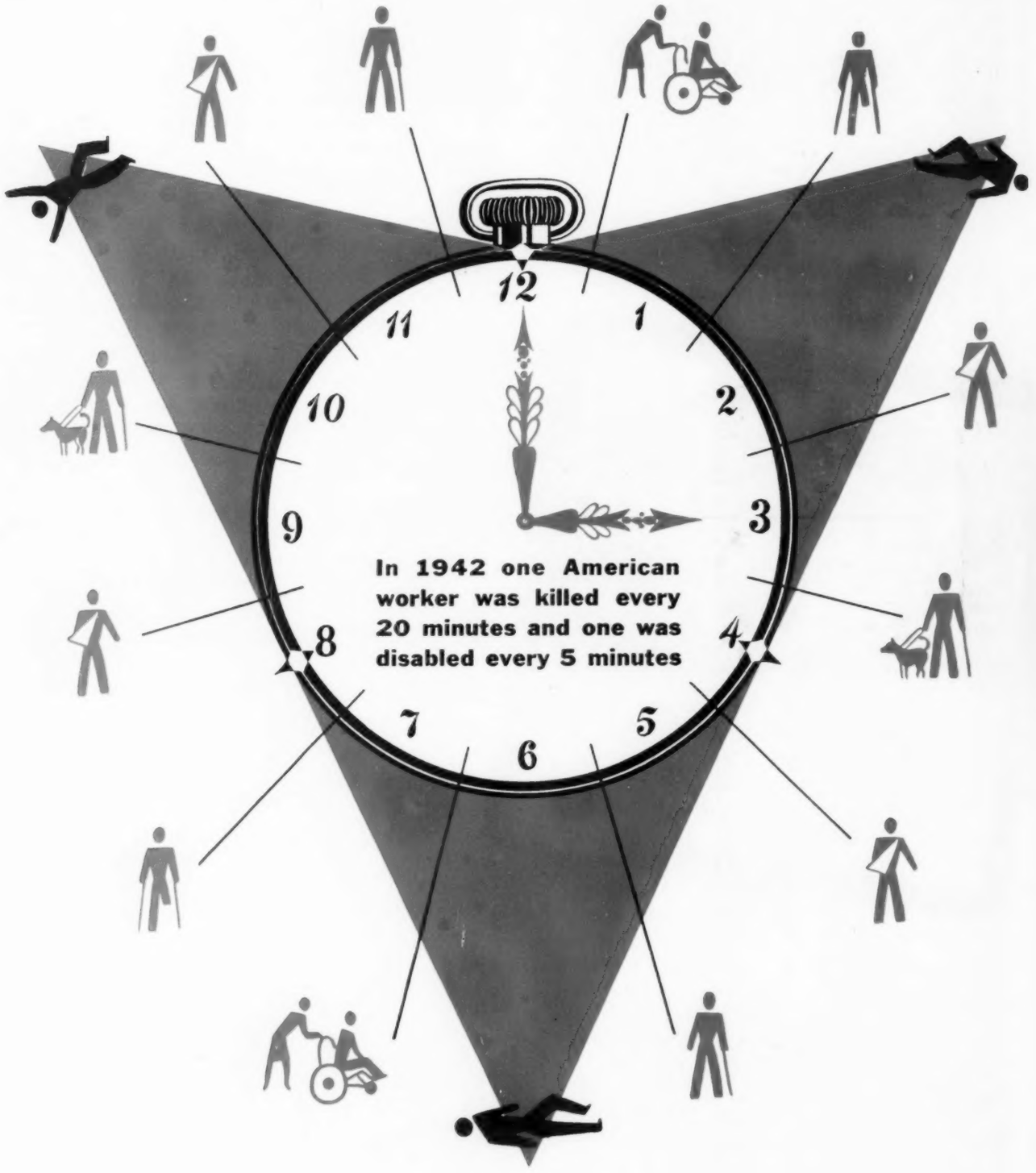
Urologic infections are essentially the same in both sexes and in children. In young children, however, about 90 per cent of these diseases are due to improper development of the urinary tract which renders it highly susceptible to infections. Many such children never reach adult life because of these infections. If they are to be saved, they must be studied and their condition diagnosed early. Children under 6 are also prone to large abdominal masses which are malignant kidney tumors.

Infection in the urinary tract calls attention to itself in many ways. In the acute stage, sudden fevers and vague pains may confine a person to bed. The finding of pus in the urine often explains the cause of such episodes, which are especially common in children. Acute kidney infections often occur during the course of pregnancy. In the chronic type of infection, fever seldom occurs; the chief symptoms are an increase in the frequency of urination from three or four times daily to many times during the day and several times during the night; in addition, there may be marked lassitude, backache and other muscle pains.

Most of the urinary infections are now successfully treated by the judicious use of the newer sulfa drugs, whose dosage and intake should be strictly supervised by a physician. Useful as these drugs are, it should be remembered that many people are unduly sensitive to them, and for such people they produce unpleasant reactions and their indiscriminate use may even endanger life. The sulfa drugs by themselves will not improve or cure some of the urinary infections unless attention is given to adjacent and remote foci of infection and unless mechanical obstructions of the urinary channels are corrected. The sulfa drugs have no effect on a tuberculous infection. A tuberculous kidney should be removed, providing the remaining *(Continued on page 457)*

EMPLOYERS, certainly all large employers, are very much concerned with the health of their employees. Why? Because it is the efficient thing to do. We have become the greatest industrial nation on earth. Just think what has happened to us since the outbreak of World War I: Development of the automobile industry; development of the aviation industry; the evolution of the wireless of those days to the radio, and of the radio to television; the gigantic expansions realized by the telephone; motion pictures; rayon; the astounding growth of the chemical industry and synthetics of all kinds; revolutionary technical improvements in all lines of manufacture; the gains in transportation; the improvement in public health.

Our plane of living at the outbreak of this new war bears little resemblance to the previous period of a quarter century ago. Our clothes, our foods, our homes are different. The



By **WALTER F. PERKINS**

MANAGEMENT'S VIEW OF INDUSTRIAL HEALTH

character of our work has changed. Our environment and thinking are those of a new age.

The treatment of employees by employers in respect to the maintenance of good health has gone through an equally astounding evolution.

Who ever heard in those days of gleaming white plant cafeterias serving good wholesome food at low prices; plant hospitals, dispensaries and first aid stations better equipped than many hospitals of those days; of clean, sanitary, attractive rest and locker rooms; of organized sports and other recreational facilities; of periodic medical examinations; and last but not least, of organized and highly successful accident prevention activities? Our progress has been astounding!

But where do we find ourselves today? Once again at war—the most terrible war man has ever fought. The Spanish-American War was a frolic by comparison. The first World War was a war of armies—huge numbers of men pitted against each other. This war is total war. It is a war of resources: men, women and children; material, economic pressure and propaganda. Because it is being fought in the air, on the land and on the sea, it is a mechanized war—a war of production. For every man in the armed forces there must be from ten to fifteen producers furnishing him with equipment and supplies.

The armed forces must have our young, able bodied men—the kind industry has been used to employing. They are being replaced in huge numbers by women, by older men and by the physically handicapped. We are even using the blind. Our military casualties are going to be heavy. Our industrial casualties will also be frightful under such conditions unless we do something about it.

The number one job of the armed forces right now, brutal as it may sound, is to kill Nazis and Japs. The responsibility of the home front is to speed up production and delivery of material to our armed forces to do that killing with despatch and finality. The only way our industrial machine can accomplish that task is to keep its workers on the job and working at high efficiency. Their health must be maintained. I am not being altruistic but extremely practical.

During the first half of 1942 one American worker was killed every 20 minutes, and every 5 minutes another was permanently disabled. Last year 480,000,000 man hours were lost due to industrial accidents. That is the equivalent of closing down 175 plants, each employing 10,000 men, for one year. Such waste is frightful.

This year, with millions of untrained workers from offices, farms and kitchens entering industry, the record is even worse. Reports show that since Pearl Harbor accidents have increased in some centers as much as 50 per cent. Unless this trend is checked, we will kill 20,000 American factory workers, 90,000 will be permanently disabled and 2,000,000 laid up for varying lengths of time. Safety is not welfare work. It's just cold blooded common sense.

Can this waste be prevented? It can, by determining the cause of accidents and eliminating hazards, by emphasizing everywhere and at all times to the worker: "Be Careful!"; by training foremen and supervisors so that they will be on guard day and night against unsafe practices.

But there is even more we must do to keep the worker fit. With restricted diets, insufficient heat, inadequate housing and difficult transportation, and with many women working who would normally be keeping house, family problems will develop. All these things will impair the health and efficiency of the worker. In our present situation there is no place for sentimentalities, but these problems must be solved. Before this war is won, I am afraid all of us will be doing just three things—working, eating and sleeping. Maintaining morale and health under such circumstances is difficult, but it must be done.

What about the future, after this war is won?

Already, under pressure of war, our world of 1940 has become an *(Continued on page 458)*

Nutrition of t

By DOLORES F. MOORE

FROM the nutritional point of view, the prenatal period is an important one in the human life span. The nutrition of the pregnant woman affects the well-being of the infant as well as her own. Today, fortunately the question of a woman's diet during pregnancy has been recognized as one of primary importance. All nutritionists are agreed that the pregnant woman requires in her diet none other than those nutrients which she requires in the nonpregnant state, but that she needs more of each constituent—more energy, protein, calcium, phosphorus, iron and vitamins.

There is scientific evidence to show that the energy metabolism of the pregnant woman is only slightly affected in the early months of pregnancy, but that it steadily increases from about the fifth or sixth month of pregnancy. Thus it appears that the added energy needs of the pregnant woman are easily met early in pregnancy, as the weight of the fetus and tissues is small up to the fifth month. The increase in basal metabolism comes during the last part of the pregnancy period, since it is at this time that the fetal growth is greatest.

The total energy requirement of the expectant mother can be gaged by her gain in weight. If the woman's weight is normal at the beginning, she needs a small caloric increase before the fifth month. On the other hand, if she is underweight, she should gain up to normal. The normal gain for pregnancy amounts to about 20 to 25 pounds. This gain may be distributed as follows:

	Pounds
Fetus	7.50
Uterus	2.00
Placenta	1.25
Amniotic fluid	2.00
Maternal organism	12.00
Total gain	24.75

When any means of weight control is attempted, it should be done only under the close supervision of the attending physician. It is important that calories alone be restricted and not the protective foods which supply tissue-building protein, vitamins and minerals.

It is seen that the fuel needs are not greatly increased during pregnancy. Obvi-

of the Pregnant Woman

ously, the old saying that the woman must "eat for two" does not apply, for the needs of the unborn child are small in comparison with those of the mother. It seems that a 25 per cent increase in calories is sufficient even at the peak of the demand. Thus, if the woman's intake had been 2,000 calories in the nonpregnant state, she probably would require 2,500 calories during pregnancy.

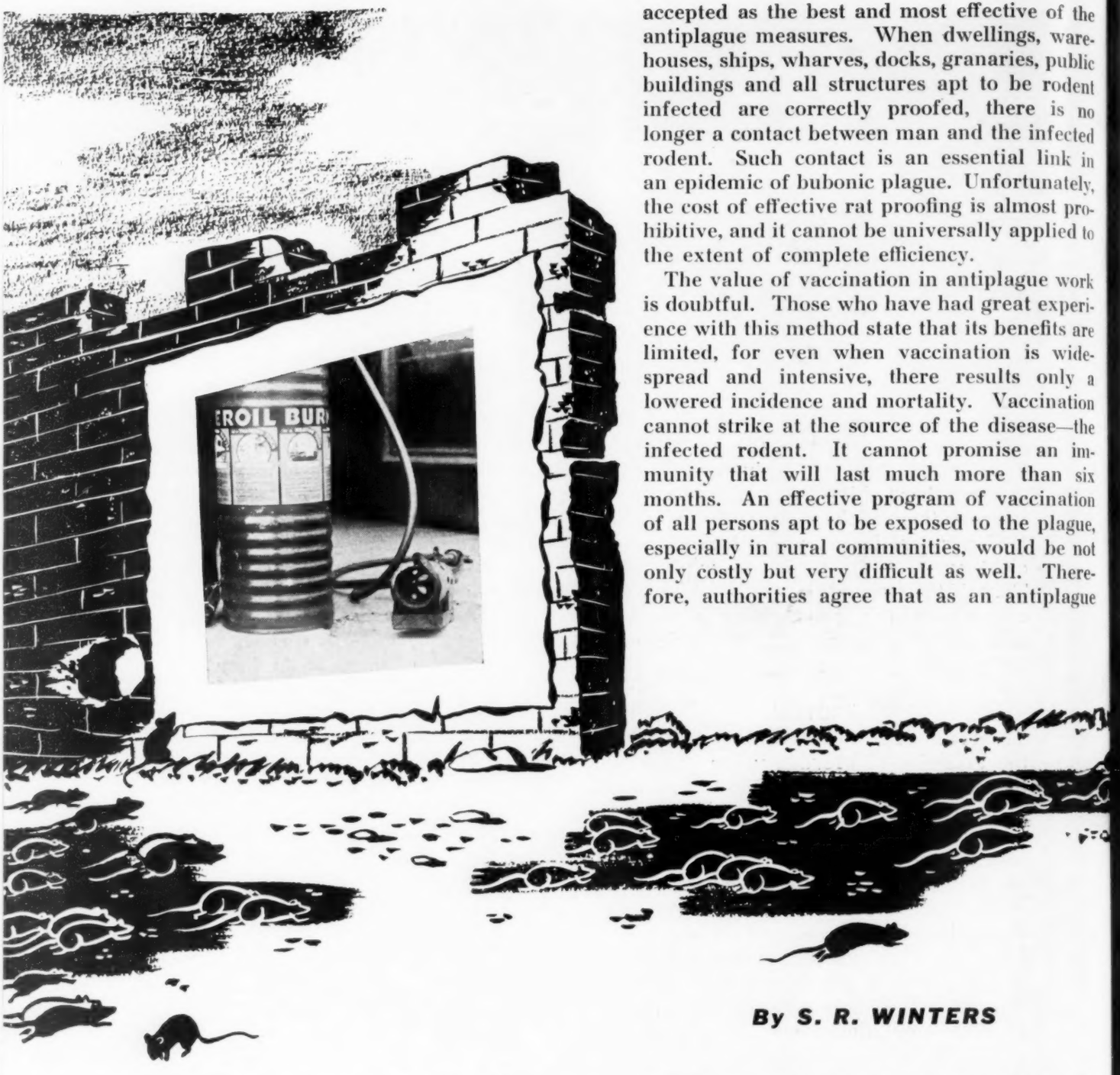
PROTEIN

There has been a general impression that the toxemias of pregnancy are related to the protein in the diet. For this reason many physicians have restricted the protein intake during the latter months of pregnancy. According to some authorities, toxic substances which may be harmful are formed in the breaking down of proteins, especially meat proteins. On the other hand, there is scientific evidence to show that toxemias of pregnancy could often be traced to a low protein intake over a period of years, and they could be greatly improved by increasing the protein intake. It has been further pointed out that if a high protein diet were harmful, all Eskimo women would long since have died of eclampsia or kidney damage. Investigators have found no signs of kidney diseases among Eskimos even though their protein intakes were very high. It is difficult to assess the general applicability of these results, but there seems to be strong evidence against the fact that high protein intakes are necessarily harmful in pregnancy. In short, during pregnancy the maintenance of a positive nitrogen balance is important in order to replace losses of the maternal tissues, to furnish adequate nitrogen for the growth of the fetus, and to build up a reserve for use during lactation.

In pregnancy, it is highly desirable that the protein foods be those of the highest biologic quality, specifically, the flesh proteins derived from fish and poultry, the proteins of milk and milk products, eggs, and a liberal serving of meat in addition to the other necessities comprising a balanced diet so that the protein needs should be adequately covered. The glandular tissues (low point value!) such as liver, kidney, thymus and pancreas are highly nutritious as regards the character of their protein, mineral and vitamin contents. The use of a food of this type once or twice a week in place of ordinary meat is commendable.

MINERALS

The three minerals, calcium, phosphorus and iron, which require special attention in the normal diet, need added emphasis during pregnancy. *(Continued on page 442)*



By S. R. WINTERS

SCIENCE and medicine have joined in a fight against war's greatest aftermath—often more horrible, more deadly than war itself—plague. Strangely enough, the new weapon they are using is one of war's own tools, the flame thrower, or fire torch. This instrument has recently been adopted by the Pan American Sanitary Bureau to kill the rats and fleas that transmit bubonic plague.

In general, there are three measures used in combating bubonic plague: rat proofing, vaccination and rodent destruction. Rat proofing is accepted as the best and most effective of the antiplague measures. When dwellings, warehouses, ships, wharves, docks, granaries, public buildings and all structures apt to be rodent infected are correctly proofed, there is no longer a contact between man and the infected rodent. Such contact is an essential link in an epidemic of bubonic plague. Unfortunately, the cost of effective rat proofing is almost prohibitive, and it cannot be universally applied to the extent of complete efficiency.

The value of vaccination in antiplague work is doubtful. Those who have had great experience with this method state that its benefits are limited, for even when vaccination is widespread and intensive, there results only a lowered incidence and mortality. Vaccination cannot strike at the source of the disease—the infected rodent. It cannot promise an immunity that will last much more than six months. An effective program of vaccination of all persons apt to be exposed to the plague, especially in rural communities, would be not only costly but very difficult as well. Therefore, authorities agree that as an antiplague measure, vaccination in its present stage of development leaves much to be desired.

The third measure, rodent destruction, is the most adaptable and practical antiplague method now in use. Methods of rodent destruction being employed vary in different countries and depend on sociologic, economic and geographic conditions. They must be changed, too, according to the epidemiology of the disease. For example, trapping is used to do away with the tarabagan in Manchuria, while shooting and poisoning are found to be much

more economical and effective against the infected ground squirrels and rodents of the western United States. In South America, where the flame thrower is now being used, the chief conveyor of plague is the rat, and almost always the plain, domestic rat of the Norway, Alexandrine or black rat type. One or more of these three species or their subspecies will almost invariably be present, it has been found, at the central point of a bubonic plague epidemic. This is true whether the plague is in town or country, whether it is found in the mountains or the lowlands, inshore or in coastal regions.

THE FIRE TORCH IN PLAGUE CONTROL

Among the more common methods of rodent destruction are trapping, poisoning, shooting, clubbing, the use of poison gases, the destruction of rodent nests and burrows and the use of dogs, cats, ferrets and other animals to kill the rodents. In Peru and Ecuador, the most effective method of rodent control has been the use of poison baits, and arsenic and phosphorus have been proved the most efficient chemicals for this purpose. Hydrocyanic acid gas is useful, too, and it is applied directly to the burrows and nesting places of the rodents. The age old exterminator, trapping, has not been neglected. Its victims are examined to detect the presence of infection among the rat populations of principal cities, seaports and shipping centers.

Terrain, climate, living conditions of inhabitants and many other factors must be taken into account for efficient rat extermination. On the Peruvian coast, plague is endemic from the Canete valley about 100 miles south of Lima north to the Ecuadorian border. Of course, not all this area is plague infected, but where plague is present the characteristic geography and climatology of the region must be considered in antirat work. Almost the entire cultivated area has been irrigated. The irrigation ditches, or "acequias," have sloping earth walls covered with vegetation and are favorite nesting places for the Norway rats, which dig holes and make their homes in the ditch walls above the water line. In addition to this, many of the towns and villages in this region have open sewer ditches which are densely populated with rats, and there are other rat havens in addition to these. Most of the coastal area is agricultural. The fields are enclosed by mud fences, or "tapias," 4 to 5 feet high and from 2 to 3 feet thick. These make splendid nesting places for rats, and burrows are dug beneath the fences. Then, too, most of the rural housing is of adobe, with roofs of thatch or bamboo and with earth or adobe floors. These floors, walls and thatch roofs provide more excellent rat harborage.

As was mentioned before, the most generally used antirat measure applicable in Peru is poison. Arsenic is mixed with ground corn and wheat and put into paper packets, or the arsenic is mixed with ground fish to form a paste for use chiefly within dwellings. Tons of these mixed poisons are distributed annually throughout the known foci in Peru. In addition, cyanogas is widely used in attacking rat burrows.

There are drawbacks, however, in the use of poison as a rat exterminator. For one thing, rats are sagacious animals, and they soon detect the dangers of the poison packets and avoid them. Then, too, the people themselves often oppose the placing of poisoned baits, because domestic animals and pets are sometimes killed by eating them. The Pan American Health Service found several times that no sooner had their agents distributed the baits than they were collected and destroyed by the people. An even more serious drawback is found in the rural *(Continued on page 452)*

POISON IVY

By R. H. RULISON

MAYBE you're one of those lucky folk who have never had ivy poisoning. Well, don't crow about it. You may have it before fall! Here is a letter from a man living in Detroit. He has a cabin on the bank of a river in Northern Michigan. He spends his vacations there. One of his first jobs each year is to cut the brush, weeds and poison ivy in the clearing.

For eleven years he did this chore without trouble. This summer he went as usual—same man, same cabin, same clearing. Only this year, three days after cutting the brush his eyelids were so swollen he could hardly see. His face was puffed, red, blistered and oozing; his hands, forearms and ankles had a similar eruption, and he had managed to spread the ivy poisoning to other parts of his body by rubbing and scratching. When his two weeks' vacation was over he went home—almost presentable.

He wants to know what happened. He says, rather plaintively, that the only unusual thing he can report is that there had been more rain than usual this year.

What did happen? It is believed that no one has more than a relative immunity to the group of plants which cause ivy poisoning. That is, if you get enough contact you will get ivy poisoning. I don't know just how this man got too great an exposure, but I do know that he is now sensitized to poison ivy and will have to be careful from now on.

Ivy poisoning is a contact dermatitis. One doesn't get it without contact, so it's important to be able to recognize the plants which cause it.

Dr. Gleason of the New York Botanical Gardens says:

"There are only four kinds of plants in the United States to which the names poison sumac, poison oak and poison ivy have been

If they wish to avoid the painful consequences of a skirmish with poison ivy or poison oak, hikers, campers and picnickers must learn to recognize and avoid these foes of comfort. When contacts become inevitable, preventive injections or other protective measures should be undertaken

Century Photos

applied. One of these is regularly called poison sumac and is never known by either of the other two names. Two of them are regularly called poison oak and are probably never known as poison ivy. The fourth is known indiscriminately as poison ivy and poison oak.

"Poison sumac is always a shrub, never a vine, and bears leaves resembling considerably those of the ordinary nonpoisonous sumac. It is an inhabitant of swamps and consequently is seldom seen by most people. As a contact poison, it is undoubtedly worse than any of the other three species. Poison sumac is found in swamps from New Hampshire west as far as Minnesota; it is also fairly common not far from the coast from New Hampshire south to Florida and Texas.

"One kind of poison oak is always a shrub and never a vine. Its leaves look considerably like those of an oak but are much smaller. It is essentially a southern plant, growing from Southern New Jersey to Tennessee and Southern Missouri and south of this line as far as the Gulf. A second kind of poison oak is usually seen as a shrub but may become a vine. It also has leaves which resemble those of an oak. It is a western plant only, growing in Washington, Oregon, California and southward into Mexico. Since persons of the New York region seldom go south for a summer vacation or frequent swamps when they go north, they are not apt to find the first two kinds. In California, the western poison oak is abundant and a frequent cause of ivy poisoning.

"The fourth kind is our common poison ivy or poison oak, *Rhus radicans* or *Rhus toxicondendron,* which is found in great abundance in every state of the union except California and Nevada. Its leaves do not in the least resemble those of an oak. On exposed, sandy beaches it may be a dwarf, erect shrub only a foot or so high. On old stone walls and fences it is a sprawling vine. In a forest, or if it chances to grow at the base of a tree, it becomes a climbing vine, growing high into the branches.

"Some people refer to the climbing or sprawling sort as poison ivy and to the erect, nonclimbing sort as poison oak, but the nonclimbing poison oak will turn into the climbing poison ivy if a support is available for it to climb upon."

It is worth remembering that poison ivy has three leaflets. The woodbine and Virginia creeper have five *(Continued on page 470)*

Stephen Deutch and Underwood & Underwood Photos

THE USE AND MISUSE OF PRESCRIPTIONS

IT IS COMMON to hear of some one being advised to take a certain medicine for a pain in the back or a cough or an upset stomach—because that same medicine was prescribed by a physician for some one else who complained of similar distress. Others are advised to treat a sore on the lip with ointment which was ordered for eczema on babies. Still others who have abdominal pain are advised to take a certain kind of laxative or sedative.

Suppose a person who is bothered with a cough has tuberculosis. Neither he nor his associates would be helped by a cough medicine designed to give relief to a patient who had only bronchitis. At best, the medicine would comfort the patient so that he would delay getting proper medical attention—perhaps until the condition was too far advanced to be cured, and at the same time he would be conveying the infection to his family and friends. The person complaining of stomach distress may have cancer. Medicine will do him no good; only surgery can be expected to be of any value. The person who has a sore on his lip may also have an early cancer; again, an ointment cannot be expected to be of any value. Only proper treatment such as radium or surgery can be of benefit.

To understand that a prescription cannot be used freely by every one who thinks he is suffering from the same condition it is necessary to realize that a prescription is a written order for the preparation and administration of one or more drugs. It is written by the physician for a definite purpose and is intended for the treatment of a specific disease or for the relief of a specific symptom in one individual. Thus a prescription cannot be used for a wide variety of diseases, nor can it be used by a large number of people.

There are several obvious reasons for this. Two diseases causing similar symptoms may be entirely different in nature. The dose of the drug may be entirely different for two people; in some persons one dose is satisfactory, while in others it is not enough and in still others it is too much. Some people are sensitive to drugs, and what may be a satisfactory amount for one patient may produce severe reactions in another. One of the best examples of this is the so-called "miracle" drug—sulfanilamide. Further, drugs may act differently in different people. They are absorbed and excreted at varying rates. The dose is affected by age, body weight, sex, time of administration, method of administration and excretion. For example, children are more sensitive to drugs than are adults, and women are often more susceptible to the action of certain drugs than are men.

By AUSTIN E. SMITH

When a physician writes a prescription, he puts in it certain directions which have resulted from a careful study of the patient's troubles and needs. Each written word has a specific meaning and bears a definite instruction which the pharmacist observes when he fills the prescription. Some of the physician's directions are reproduced on the label, but those which relate to the choice of drugs, their preparation and intended use are necessarily absent. Otherwise, the label would be an open invitation for the patient and other members of the family to use the contents of the bottle or package whenever they suffer from complaints which, to the untrained eye, appear similar to that for which the prescription was written.

The only proper use for a prescription is when it is administered to the patient as prescribed by the physician. Misuse consists of not following the physician's directions as to size and frequency of dose, and of using the prescription for other *(Continued on page 456)*

GOLDBRICKS

By WILL O'NEIL

JOE was a comparative stranger in the neighborhood, but he had been around long enough to rouse the anger of some of the parents whose sons had already gone off to war. He was in his twenties, unmarried and apparently healthy. When people asked him why he wasn't in the Army, he smiled mysteriously and bragged that the draft board would never get him. Sometimes, to the boys on the corner, he hinted that he'd fixed himself up so the doctors wouldn't pass him.

The parents began calling at the draft board. There was a virtual flood of complaints about Joe. Word of his hints got around, and people wanted to know what the doctors were doing—keeping young men like Joe out of the Army so they could make war wages. The draft board refused to explain why Joe had been classified as 4-F—mentally, morally or physically unfit for military service. To those who were decent to him the clerk explained that the draft law didn't allow him to tell why Joe or anybody else was given any particular classification. People would just have to trust the board, the clerk said.

Somebody finally found out what was the matter with Joe. He limped a little, hardly enough to be noticeable, but he had only one foot of his own. The other was artificial.

That information, when it was spread around, stopped the complaints, although one woman did snort something about the young man having cut it off himself to avoid fighting. Men have been reported to have blown off their toes for that purpose—and to have taken a little more than they intended—but this chap wasn't one of them. He had already explained to the board that he lost the foot in an accident years before anybody thought of Selective Service.

The little incident did cause a lot of speculation in the neighborhood, though, about other young fellows who probably *had* fooled draft boards and doctors when there really wasn't anything wrong with them. No one could cite an actual case of such malingering, but every one, it seemed, had heard rumors about such things, and most people were sure there would be a scandal about it some day.

Undoubtedly, there have been some cases, because no system is ever perfect, but the Army, until recently the only service which drafted its men, hasn't been asleep on the problem of the malingerer. Long before Selective Service went into operation in 1940 the military doctors were warned to be on the lookout for the fellow who purposely maimed himself, or who feigned disease or mental illness as a means of escaping the draft. Doctors moving from civilian practice into uniform all get the warnings.

The malingerer, or goldbrick, as he is known in the Army, is never quite normal in his actions and reactions. He is playing a part for his own benefit. Invariably, he overplays or underplays it. One thing that aids the goldbrick is time, for the volunteer civilian physicians serving draft boards and the Army doctors at induction stations are all working at top speed. But time also works against the malingerer because all draft classifications, even the 4-F, are temporary and subject to change. So the goldbrick must be eternally on his guard.

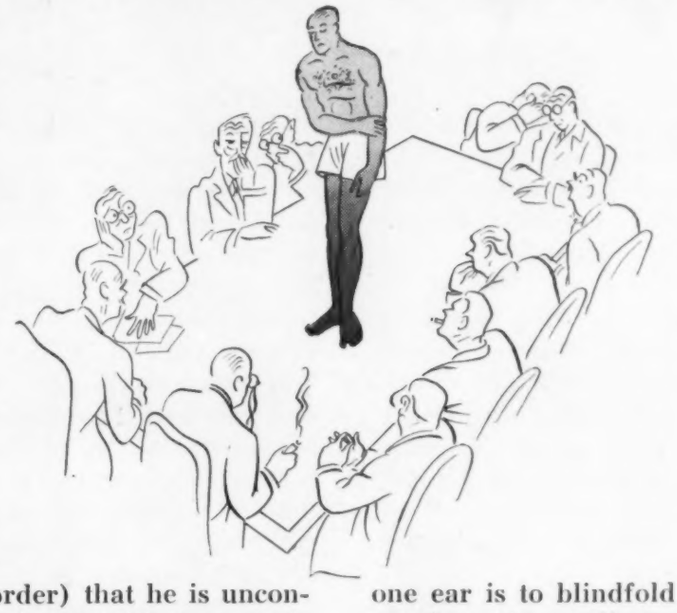
At times the doctors must decide whether a man is deliberately malingering—acting out a disability to escape duty—or whether he is a psychoneurotic, actually convinced that he has a disability even though he is perfectly well. In these cases, instead of an organ telling the mind that it is sick, the mind itself is sick enough to conjure false, but, to the person, very realistic, symptoms of trouble. These mentally disordered men are not wanted in the Army, because they would be a liability rather than a help in our fight.

There appears to be a growing body of military medical men who believe that the deliberate malingerers, as differentiated from the psychoneurotics, must be mentally disordered to try to evade service by such tricks. This disordered condition, these doctors hold, ren-

ders the men unfit for service. The less charitable layman might conclude that the malingerer is obviously "yellow" and that he wouldn't be much help to his fellow soldiers under fire anyway.

Despite the rumors that float around, doctors who are in a position to know say there is relatively little malingering before draft board and Army examining physicians. Detection, in most instances, means the man is inducted into the Army immediately.

One of the earliest goldbrick stories to become current involved the man who had enough teeth extracted to keep him out of the Army. The Army warned its examiners to be on the lookout for such men, but it isn't necessary to watch for them any longer. A man doesn't have to have a single tooth in his head to be acceptable now for front line duty.



Doctors know a countering move for practically everything the goldbrick can think of. The doctor who suspects a man of malingering is especially careful to make sure that his suspicions don't lead him to overlook an actual ailment. The malingerer is apt to become so wrapped up in the part he is playing (there is that element of mental disorder) that he is unconscious of some real physical trouble that needs fixing.

The Army doesn't accept men who can't read and write. One man who claimed to be thus completely uneducated was told he would have to make his mark on a paper. The paper was a statement, printed in very small type, in which the man admitted he had committed a serious crime. The man denied the crime but confessed he was attempting to cheat his examiners.

The man who claims to be blind in one eye is subject to tests with polarized lenses, prisms, colored glasses and other devices that prevent him from fooling the doctor. The old-fashioned family stereoscope, which calls for vision in both eyes to complete the picture, is also used for similar tests. A prism placed before a man's good eye can be used to make him see double if there is actually sight in the "blind" eye. This information, or any of the other information in this article, won't help a man beat the doctors. With a re-arrangement of the prism, for example, the doctor can also make the man see double if he really is blind in one eye.

The man who isn't color blind and who is feigning blindness in one eye may be unmasked through the use of colored glasses. The text he is to read is spelled out on a special glass screen in red and green letters. The man is given a pair of spectacles having one red and one green lens. He can't see the red letters on the screen through the eye covered by the green lens, and vice versa. Since he can't tell which letters he is reading with his supposedly "blind eye" he is sure to make a mistake.

The methods used to detect a goldbrick who admits some sight in his worst eye but claims to have less vision than he actually has are wonderfully simple in many instances, but they cannot be discussed because they will work only when the malingerer is unaware of what he is going through.

The simplest way to test a man who claims to be deaf in one ear is to blindfold him and then put the earpiece of an ordinary stethoscope in his ears. The examiner counts or speaks into the bell-shaped chest piece of the stethoscope, permitting part of his message to go to the suspect's good ear and part of it to his "bad" ear. The suspect is unable to tell when the tube to the good ear is closed and the other opened. The average goldbrick doesn't know enough about the conduction properties of the ear and skull to beat other types of tests with which the doctors are familiar.

The man who attempts to eat himself into such shape that he won't fit an Army uniform is wasting his time, money and health. Men over the 300 pound mark are now in service.

Jaundice may be simulated through the taking of picric acid, but the acid will be found in the urine. Sugar has been added to urine, or cantharides taken, *(Continued on page 436)*

YOUR VICTORY VITAMIN GARDEN

By J. G. ALEXANDER

RECENT Washington reports stress coming summer shortages for all localities receiving transported fresh vegetables. Fifty per cent of all commercial vegetables will be bought by the government. Recent surveys by nutrition experts and the large number of rejections under the Selective Service Act both emphasize the need for sufficient quantities of vegetables rich in vitamins and minerals. Sifted from the mass of food information flooding from press and radio, one thing is certain—the family which grows its own vegetables and prepares them nutritiously will not be seriously affected by transportation bottlenecks.

If you are one of the estimated 18,000,000 Victory Gardeners to take up the spade and hoe this year in defense of the family board, you will continue to collect every scrap of garden-to-table information and apply it at the proper time. The backaches, mosquito bites and bruised knuckles will be as labor lost unless all possible care has been taken to preserve the mineral and vitamin content of the vegetables presented at the family spread. And there's many a slip 'twixt the seed and the lip. (Should you not already have your free copy of the government's newly revised Victory Garden booklet a penny post card to Office of Information, United States Department of Agriculture, Washington, D. C., will get action. Ask for miscellaneous publication No. 483: "Victory Gardens.")

Now, how can you make certain your collection of leaves and tubers will contain all possible nutritional value? First, plan to make every square foot of your available land account for itself in the greatest number of bone and tissue building elements. For the average sized plot of 30 x 50 feet, it will be found practical to include only those vegetables shown in Group I on the Victory Gardener's Nutrition Chart on the opposite page. You who have a space approximating 50 x 100 feet will find it profitable to add the varieties appearing in Group II. Plantings of sweet corn, potatoes and peas are suggested as additions for Group III areas. These types are wide rangers and heavy feeders and should not be included in a small garden.

This year, the foresighted tiller will concentrate on that harvest of vitamins and minerals. He will reduce much space formerly devoted to relatively low nutrition vegetables such as onions, radishes and cucumbers. These, of course, have a distinct virtue as "appeteasers" in the salad bowl, as do the various herbs, and should be allotted recognition in proportion to the gardener's practical needs.

A properly planned 50 x 100 foot Victory Garden should produce at least $50 to $75 worth of vegetables in a season. If you were spending this amount over the grocer's counter you would examine the produce with care to know you were getting value for your money. In the kitchen, vegetables costing double their former prices are hewed to the waste line before any parts are discarded. "Waste not, want not" will have a new meaning for us all this season.

VICTORY GARDENER'S NUTRITION CHART

	Vegetable	VITAMIN A	VITAMIN B_1 (Thiamine)	VITAMIN C (Ascorbic Acid)	VITAMIN G (Riboflavin)	CALCIUM	IRON	Minimum Space Between Rows	Distance Between Plants in Row	PREPARATION FOR COOKING	TIME OF COOKING WHEN VEGETABLES ARE		
											BAKED	STEAMED	BOILED
	BEANS, LIMA (green)		*Excellent*		*Good*		*Excellent*	INCHES 24	INCHES 24	shelled	HRS.	MIN.	MIN. 30
	BEANS, SNAP	*Excellent*	*Good*	*Good*		*Good*	*Good*	24	24	in pieces		25-30	20-30
	BEET GREENS	*Excellent*			*Excellent*		*Excellent*	14	2-3	with stems			15-20
	CABBAGE		*Good*	*Excellent*	*Good*	*Good*		27	15-24	quartered		15	10-15
GROUP I	CARROTS	*Excellent*	*Good*		*Good*	*Good*		14	2-3	whole, young		20-30	15-20
	CHARD	*Excellent*				*Excellent*	*Excellent*	18	4-6	with stems			20-30
for Areas 30×50 Ft.	LETTUCE (green)	*Excellent*	*Good*		*Good*	*Good*	*Good*	15	12				
	ONIONS (green)			*Fair*				14	2-3				
	RADISHES			*Fair*				12	2				
	SPINACH	*Excellent*	*Good*	*Excellent*	*Good*		*Excellent*	12	3-4	with stems			10
	TOMATOES	*Excellent*	*Good*	*Excellent*				36	24	quartered	½-¾		10-20
	TURNIP GREENS	*Excellent*	*Good*	*Excellent*	*Excellent*	*Excellent*	*Excellent*	14	2-3				20-30
Add	KALE	*Excellent*	*Good*	*Excellent*	*Excellent*	*Excellent*	*Excellent*	18	12				20-25
GROUP II	MUSTARD GREENS	*Excellent*	*Good*		*Good*	*Excellent*	*Excellent*	15	4-6				20-30
	PARSNIPS		*Good*	*Good*		*Good*		18	2-3	whole	½-¾	30-40	20-30
for Areas 50×100 Ft.	SQUASH, HUBBARD	*Excellent*						100	30	pared, sliced		20	15
Add	PEAS (fresh)		*Good*		*Good*			18	1	shelled			10-20
GROUP III	SWEET CORN		*Good*					36	15	on cob		10	6-15
	POTATOES		*Good*	*Good*				24	12	whole	¾	40	35
for Areas 100×150 Ft.	SWEET POTATOES	*Excellent*	*Good*	*Good*				36	15	whole	¾	30-35	25-30

Here are a few reminders to help make certain you get full nutrition value for the money and man or woman hours invested in your vegetable factory. Assuming you have purchased seeds and plants of good heredity from a reliable source, there follow the Six Freedoms of your nutrition garden:

1. BIRTHRIGHT. *Fertilize the Soil.* A new Victory Garden fertilizer of 3 per cent nitrogen, 8 per cent phosphoric acid and 7 per cent potash has been made available. Apply 1 lb. per 25 feet of row. If it is not obtainable in your community, contact your county or local Victory Garden Center or write to the National Victory Garden Institute, 598 Madison Ave., New York City. The old standby, super-phosphate combined with stable manure, is another widely used fertility builder. Frugal planters are of course working last year's well-rotted leaves and other decayed garden residue into their soil, about 1 bushel for every 25 square feet.

2. INDEPENDENCE. *Allow enough space between plants.* Get your money's worth from each seed and plant. When transplanting or thinning, follow distances shown on the Gardener's Nutrition Chart for minimum space between rows and between plants in row. Violations too often result in warped, stunted or devitalized vegetables.

3. SURVIVAL. *Weed often, cultivate thoroughly.* Weeds choke your food profits—compete with plants for soil moisture and food, harbor pests and provide breeding places for plant diseases. Get them young, roots and all! Cultivate further by breaking up hard, crusty earth surfaces to help prevent loss of moisture. Loosen and work soil (but only when dry) to allow roots to breathe and keep their chemical production line moving. Water wisely by placing the hose on a flat rest and allowing only a moderate stream to flow close to the soil. Plants get moisture through roots—sprinkling the surface does not irrigate sufficiently, and when this is done roots often turn up instead of reaching down and outward for nourishment.

4. HEALTH. *Control plant diseases and insects.* Although insecticides such as pyrethrum and rotenone will not be abundant, it is expected that there will be enough on the market for adequate protection. Spray or dust undersides of plant leaves as well as the tops.

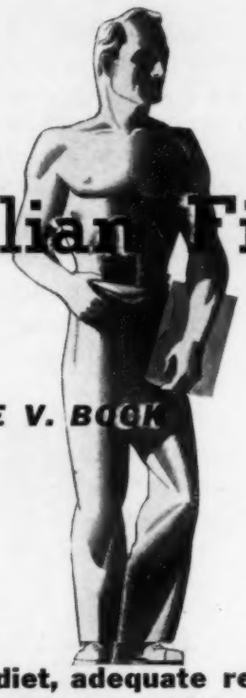
5. FULFILMENT. *Harvest on time.* Learn to recognize the exact state when each vegetable has reached its taste perfection and nutritive maturity. Take the high road to refrigerator or cellar and get there before sugar, moisture and vitamin content decrease. Spinach will lose 50 per cent of its vitamin C when stored at room temperature for three days. Vitamin A is depleted when green leafy vegetables are allowed to wilt or dry out. Root vegetables kept outside refrigerators should be given cool, dark storage and left unwashed until ready to cook.

6. DESTINY. *Prepare intelligently to preserve vital elements.* Minerals such as calcium, iron, phosphorus and magnesium dissolve into vegetable cooking water. More than one-half the vitamin C content of green beans, Swiss chard, carrots and peas passes into the water after two minutes of heating, and much destruction takes place during the first minute of boiling. Hence, peel vegetables thinly, do not cut up too small and do not cut until ready to start in boiling water.

Use a covered utensil, cook in as little water as possible, with no soda, and keep within maximum tender-time shown on the chart. Salvage that mineral and vitamin laden cooking water to be used in gravies, sauces and soups or just sopped up with corn bread.

Prepare raw salad vegetables at the last split second to retain the elusive A and C qualities. Bolster the salad bowl from the shy herb garden or that little bed of parsley, peppers, chives or cucumbers. Serve these as essential parts of the bowl, not simply as colorful frills. Ounce for ounce, parsley is away out in front of the vegetable lineup in vitamin A and iron. Red peppers are an outstanding source of vitamin C. The green variety also hits high "C." And for extra value, don't snub the early dandelion green. Obnoxiously gregarious though it is, it's firm and fully packed with nutritive elements, free and easy on the budget—more calcium and iron than spinach, more A than carrots, more C than tomatoes, although the latter three are regarded as better nutritional sources because of quantity consumption.

So this year, with a quarter of our country's total food production needed for the armed forces, you and you, multiplied by eighteen or twenty million, will make no small contribution when you dig deep and come up with more victory vitamin vegetables! Too, your family will not be part of the nation's fateful 40 per cent, overfed but undernourished, if (to paraphrase irreverently) you are master of your grate and captain of your soil.



Civilian Fitness

By ARLIE V. BOCK

A proper diet, adequate rest and sleep, sensible physical activity and the right attitude toward work add to fitness

ONE deplorable aspect of life in America is reflected in the advice we all get over the radio concerning a great variety of remedial agents. Those who act on these suggestions are the victims of fear. Because there are so many such victims the makers of liver pills, cathartics and aids for this and that ailment are able to make good financial dividends. We do not need to take drugs to keep healthy. The slogan "alkalize your system" is a means of selling alkalies to those who do not need them. The phenomenon as a whole indicates the vast number of people among us who need crutches of one sort or another for survival. It denotes concern about body functions that would do very well indeed if left to Nature's favoring resources. When you have a cold or an acute upper respiratory infection, your best friend is early and sufficient bed care. Little else can be expected to help it. Your bowels will move if you give them a chance, and of all things you do not need colon irrigations. Your liver has enormous capacity to look after itself, and your kidneys get all the flushing out they need if you are leading a reasonable type of life. Your skin does not need "skin food," and occasional soap and water is the best treatment for your scalp. In short, simple, intelligent, everyday hygiene is all that you need to have concern about in all these respects. When things begin to go wrong, get some needed rest, and when questions arise that you cannot answer try to consult your doctor at once instead of worrying about the possibilities of cancer and other dire consequences.

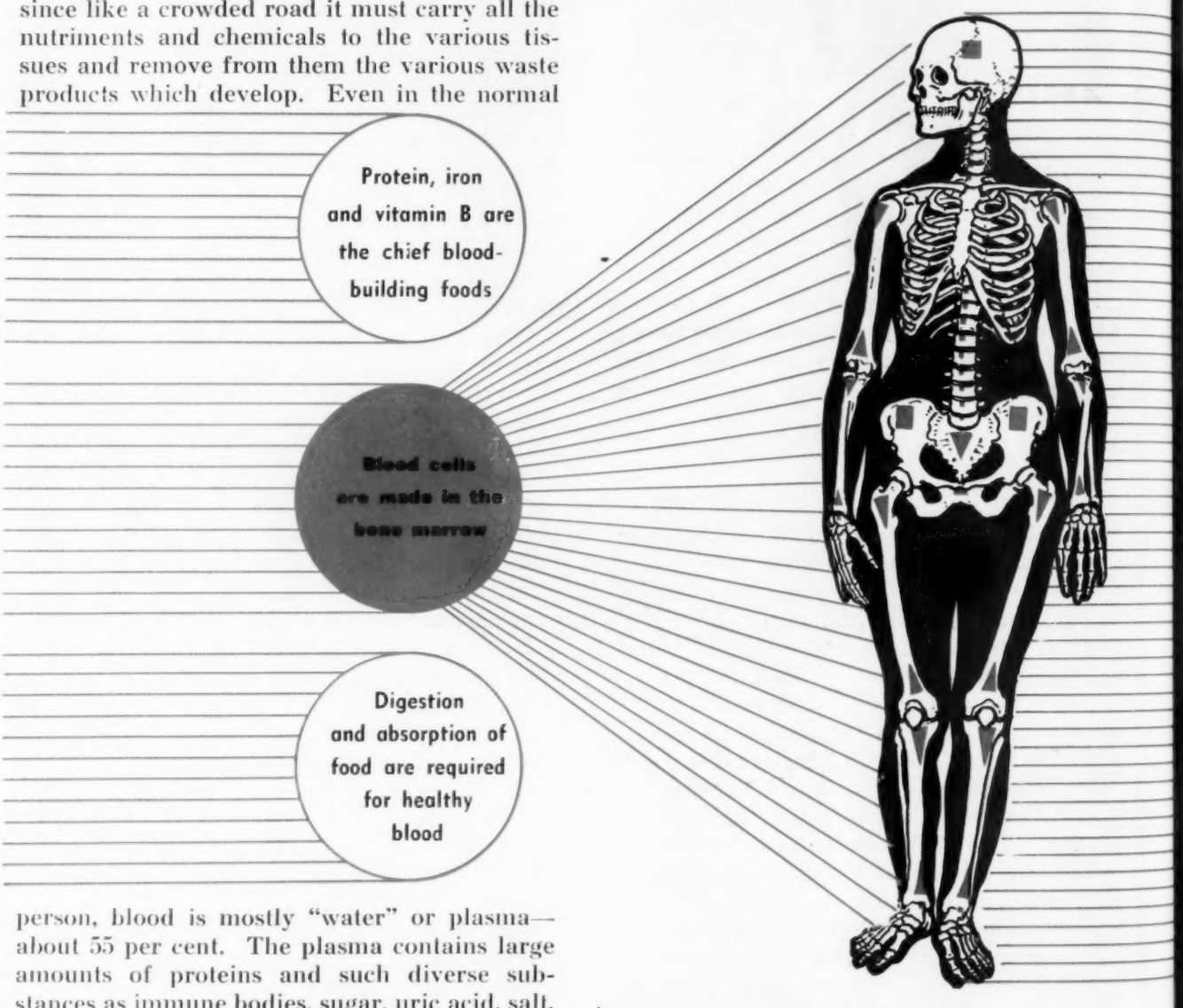
To keep fit we must all eat a sufficient quantity of substantial food, preferably divided into three daily meals. What you should eat seems to be discussed in nearly every newspaper and weekly and monthly magazine. The basis of our common diet consisting of fresh fruit, milk, meat, potatoes and a variety of vegetables is well known. All the fads and fancies about diet should be forgotten. If you know and can obtain those items of diet that serve your particular needs and feel that these provide you with the energy necessary for the day's work, you need not worry about the suggestions of your neighbor. There are those who believe that red meats were never meant for human consumption, and still others who believe that a strictly vegetarian diet feeds the fountain of youth. These vagaries indicate individual peculiarities but usually have little concern for the majority of us. Remember that the cause of most of your indigestion is your tired state. For the most part, you cannot eat this and that because you are hurried and worried. You can pet your allergies and nurse your gastric ulcer by various mechanistic diets and other means, but until you recognize that your gastrointestinal tract cannot function properly with your present mode of dealing with yourself, indigestion will be your bane. You do not need prolonged psychiatric or psychoanalytic aid to reveal that either badly needed decisions and adjustments in your way of living must be made or that you need shorter hours of work and more adequate rest periods.

Our diets in many respects are being modified because of the exigencies of war and may before summer comes be reduced to serious shortage. We used to think that many things "can't happen here," but we are learning that they can happen. The decrease in acreage of fall plowing last autumn, lack of machinery, and the drainage of farm labor into military service will give us reduced crops this summer. If you have a chance to plant a Victory Garden this spring you will make no mistake. Grow and save everything you can. We should have enough to eat, but the character of our food will be greatly *(Continued on page 468)*

ANEMIA" is derived from the Greek language and means "lack of blood." Strictly speaking the most anemic person has plenty of blood, although it has become quite watery. Anemia really means a reduction in the red or solid elements of the blood and in their important ingredient, hemoglobin.

Blood contains many substances. It has to—since like a crowded road it must carry all the nutriments and chemicals to the various tissues and remove from them the various waste products which develop. Even in the normal person, blood is mostly "water" or plasma—about 55 per cent. The plasma contains large amounts of proteins and such diverse substances as immune bodies, sugar, uric acid, salt, cholesterol and many other materials. The solid or cellular elements of the blood (normally about 45 per cent) are made up of enormous numbers of tiny globules called red cells, with fewer white cells and platelets. If one spins a volume of blood at high speed in a test tube, it shortly separates into layers, the topmost one of watery plasma, the lowest made up of a mass of red cells, with a thin topping of white cells and platelets. Propelled by the force of the heartbeat, these cellular elements of the blood are constantly on the move and by means of the tiny capillaries squeeze into every tissue of the body. Blood is truly life, for without red cells oxygen cannot be delivered to the tissues and carbon dioxide accumulates.

Although the cells of the blood are one of its characteristic features, they are not manufactured in the blood but come there in large part from the marrow of our bones. Nature has done wisely to sequester behind almost impenetrable bony structures the blood cell-building tissues, which remind one of the modern underground factories in shell torn countries. In the marrow of the skull bones, the ribs, the sternum, the spine, parts of the hip bones, and in the ends of the long bones are found numberless foci of active cellular


Protein, iron and vitamin B are the chief blood-building foods
Blood cells are made in the bone marrow
Digestion and absorption of food are required for healthy blood

By WILLIAM DAMESHEK

growth constantly manufacturing cells which on ripening are discharged into the blood stream and become the blood cells. The marrow seems ideal for blood cell formation: the blood flow there is sluggish, far removed from the turmoil of active circulation and protected from the sudden changes which often occur in the various active organs; moreover, there is relatively little oxygen, and this results in stimulation of red cell growth.

Growing in profusion, then, in these bone marrow gardens are three types of cells: red cells, white cells and little bodies called platelets, derived from huge giant cells. The red cell has a curious, perhaps unique type of development. It goes through its entire growth cycle in the marrow and there loses what is

any cell's distinguishing and central feature—its nucleus. Actually, it is now no longer a cell but merely a chemical envelope containing what is probably the body's most important chemical—hemoglobin. The hemoglobin pigment, which has a rusty hue, gives blood its color. Its chief characteristic is its extraordinary reactivity with oxygen and carbon dioxide, and even more with carbon monoxide—when the latter is accidentally present. The red cell saturated with oxygen is almost bright red, as in the arteries. "Blue blood," far from being a sign of aristocracy, indicates an insufficiency of oxygen, as in the veins just before the blood has been transported to the lungs for new oxygen. In reality, it is not the lungs which breathe but rather the red blood cells, which take on oxygen and give off carbon dioxide in the lung spaces and reverse the process in the tissues.

Although the bone marrow is equipped to manufacture red cells efficiently throughout life, it must like all factories be well supplied with the raw materials, both for the cell itself and for its contained hemoglobin. Ultimately, these materials come in through the food. For blood cell formation, at least protein, iron and vitamin B complex are essential. Ascorbic acid—vitamin C—and perhaps other substances, including copper, may be of secondary importance. The proteins in meat, liver and the yolk of eggs are better for this purpose than those in milk, cheese and the legumes (beans, peas). The better proteins also contain the largest quantities of iron—an essential element in the hemoglobin molecule. A lack of these foods will result in an insufficiency of raw materials for hemoglobin and red cell production, and thus in anemia.

But before these materials can be utilized for manufacture they must be digested by the stomach and then absorbed by the intestines into the blood stream. For the stomach to digest these foods properly, it must have plenty of hydrochloric acid and another material described by William B. Castle as "intrinsic substance." The acid seems to digest iron-containing food, and Castle's enzyme converts protein products into a material which helps build the red cell itself. If the stomach is for various reasons out of commission—inflamed, the site of premature wasting or of cancer—anemia is bound to develop. Although the food intake may be adequate, normal digestion cannot take place. Similarly, the intestines, which are the great absorptive organ, must function normally; it *(Continued on page 437)*

Medicine's New-Old Handmaiden

By BARCLAY MOON NEWMAN

ONLY a few years ago doctors would have agreed that death was sure to follow if our body's temperature went down much below 95 degrees. Today this belief has been exploded. More than that, man's ancient enemy, cold, is the chief tool in a number of interesting new technics. One of them is shockless, drugless, almost bloodless surgery. Another is a great boon to shipwrecked seamen. Yet another suggests that human biology can bid time stand still. It is too early to say that medicine is on the verge of an ice age, but beginnings have been made that point to exciting discoveries not far around the corner. A technical journal calls this "one of the most fertile fields open to modern medicine."

If our physicians weren't making friends with ice, James W., to pick only one of many similar cases, would probably not have lived. James was 83. His arteries were hardening, his circulation very poor. So when he stubbed his toe it was not surprising that it should turn red, then black with gangrene, and finally have to be amputated. But infection continued to spread, and he was taken to New York's City Hospital on Welfare Island, where it was soon obvious that his leg would have to come off. An operation which no one of his age, or in his condition, had much chance of surviving.

James was lucky in his hospital, because it was there that Dr. Lyman Weeks Crossman and his associates had worked out a routine, for just such cases, founded on Dr. Frederick M. Allen's shockless ice surgery. A tourniquet was bound around his leg, not at the thigh as dictated by conventional surgery, but at the "forbidden level," half way up the calf and right across the angry streaks of infection. His leg was packed in cracked ice and kept in ice for one hour. Then James was wheeled into the operating room. No anesthetic was given him—the numbing effect of the ice was enough. His ears were plugged with cotton, and a screen placed in front of him, so that he could neither hear nor see the sawing and cutting that were taking away his foot and ankle but giving him back his life. Throughout the operation he was in good spirits. Soon after it he ate a good lunch. There was no nausea, no weakness; most important of all, no shock. Today this method is being experimented with, and often made routine practice for amputation of feet and legs by a number of surgeons.

In Oak Park, Ill., Dr. Robert T. McElvenny received an emergency call to help a man both of whose legs had been cut off at the knee by a train. Dr. McElvenny found him all but bled out, in profound shock, with blood pressure nearly at the vanishing point. In spite of emergency treatment—transfusion and sulfanilamide bandages—so much dirt had been ground into the ragged stumps that within twenty-four hours the wounds began to fester. Then pneumonia developed. The poor fellow seemed a candidate, not for medical history, but for the undertaker.

But Dr. McElvenny had studied the Allen method. In spite of the patient's pneumonia, he packed the torn flesh in ice. Pain ceased within an hour. Soon after, the foul discharge stopped. The man came out of delirium; blood pressure rose to normal. Three days later, an operation to trim and close the wounds was possible. Five days *(Continued on page 455)*

This Career Seeks You

Nursing offers exceptional opportunities to young women between the ages of 18 and 35 who are in search of a career. It offers a place in a profession which is always needed—now, for the urgent work of war; in peacetime, for the growing civilian demands for the many kinds of nursing service.

In its wide range of activities, nursing has a place for many kinds of abilities and interests. Nurses serve with our armed forces, with characteristic devotion to duty. They help to guard the health of workers in war industry. They are needed in hospitals, in homes and in relief work in this country and in foreign lands. Nurses occupy important roles in public health programs and in teaching health and nursing education in schools and communities.

Investigate nursing for your career—for a career in which the deep personal satisfaction of doing a worthwhile work is equaled only by the security that a lifetime profession can give. If you cannot obtain full information in your community about nursing as a profession and the nation's many excellent schools of nursing, write to Student Nurses, 1790 Broadway, New York City.

FINE PHARMACEUTICALS SINCE 1886

Upjohn
KALAMAZOO, MICHIGAN

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Who'd have thought Donald had rheumatic fever?

IT WAS SOMETHING of a shock to Donald's parents when the school physician advised them to have the boy examined by their family doctor for a suspected heart ailment.

They took him to the doctor at once, and, sure enough, the examination confirmed a slight impairment. "What *ever* could have caused it?" they wanted to know. Under the doctor's questioning, they learned the answer.

They recalled that, about a year before, Donald had been a little below par for a time. His appetite had been poor and he had failed to gain weight. He had complained of fleeting aches in the joints, and a slight fever. After a while in bed, he began to pick up, so they hadn't bothered the doctor. Little did they suspect that he had suffered from active rheumatic fever, a disease which may affect the heart—especially if there are repeated attacks.

Fortunately, the damage to Donald's heart was slight. Now that he had had no fever in months, there was no reason for treating him differently from other children—except in one important respect: *Donald had shown himself susceptible to rheumatic fever, and everything possible should be done to prevent further attacks.* His general health and resistance should be built up and he should be guarded against sore throats and colds.

What every parent should know

Rheumatic fever causes between 80 and 90 per cent of the heart disease in people under the age of 35. The first attack is most likely to occur between the ages of 5 and 14.

Sometimes, as in Donald's case, early signs of acute rheumatic fever may be so indefinite that the disease is overlooked. Other cases may be accompanied by inflammation of the joints which become swollen, red and painful, and a fever as high as 103 degrees. Additional signs may be severe nose bleeds, and nodules, or lumps, under the skin. Even though the illness appears mild, a child should be kept in bed as long as any of these signs of infection persist.

In most cases, when a child has recovered from rheumatic fever and the disease has been inactive a sufficient time, he can and should engage in normal play and school activities. Parents should continue to be especially watchful to see that he gets sufficient rest, nutritious meals, and cultivates healthful living habits. Furthermore, sick or well, he should be taken to the doctor for periodic checkups.

For additional information about this disease, send for Metropolitan's new free leaflet, 63-Z, "About Rheumatic Fever."

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75th ANNIVERSARY—1868-1943

Metropolitan Life Insurance Company

(A MUTUAL COMPANY)

Frederick H. Ecker,
CHAIRMAN OF THE BOARD

Leroy A. Lincoln,
PRESIDENT

1 MADISON AVENUE, NEW YORK, N. Y.

Goldbricks

(Continued from page 427)

to produce false indications of kidney trouble. Men have been known to inject canned milk into the penis in an attempt to make the doctors think they were suffering from gonorrhea. Various substances may be injected under the skin to create abscesses which the man hopes will keep him out of the service.

Tricks such as these are comparatively rare. Chances for successful evasion of service are extremely slim under the watchful eyes of the doctors. When time and facilities at the induction stations are limited, the suspected malingerer may be confined in a hospital for further observation and examination.

Hospitalization may also be used for the examination, when necessary, of those suspected of feigning nervous or mental illness. While the line between deliberate malingering and actual mental illness is often a shadowy one, again the doctors have a number of guides to aid them in separating those who pretend illness from those actually incapacitated. Among the suggestions for the guidance of doctors examining malingerers in the mental field are those laid down by Davidson, writing in *The Military Surgeon:*

1. The true neurotic enjoys being examined and re-examined, but the malingerer doesn't. He is suspicious and shies away from the examining physician.

2. The neurotic's disability cuts into all levels of life, such as in playing cards or attending the movies. The malingerer's disability exists only when he is near a doctor.

3. While the neurotic shows a general unstable personality, the malingerer usually has a background of craftiness and deceit.

4. The neurotic willingly submits to operations or other painful procedures. The malingerer is reluctant to take any treatment.

NOTICE TO SUBSCRIBERS

CHANGE OF ADDRESS NOTICE should be mailed whenever possible four weeks prior to the date change is to be effective and should state whether change is permanent or temporary. Both old and new addresses should be given.

HYGEIA CIRCULATION DEPT.

ANEMIA

(Continued from page 433)

matters little if the proper food gets in and is digested if the intestines hurriedly discard it, which is the case in chronic diarrhea or dysentery. From the intestines, the suitably prepared raw material is now taken by the blood to the bone marrow. But before it gets there, it must make a detour to the great storage warehouse of almost every type of nutriment—the liver—where any excess is retained for emergency use. The normal liver thus becomes filled with blood building substances and ounce for ounce contains more iron, vitamin B complex and "blood forming" factor than any other tissue in the body. It may also help in preparing substances for ultimate use by the marrow tissue. Thus the marrow receives its supplies.

A well supplied and properly functioning marrow produces trillions of new red cells daily, each containing its complement of hemoglobin. These little plastic envelopes constantly move about in the circulation and are finally destroyed. However, the forces of destruction are kept balanced by those of formation, so that at any given moment the blood contains the following:

Red blood cells: 5,000,000 per cubic millimeter (the size of a small drop).

Hemoglobin within the red blood cells: 15 grams (½ ounce) per 100 cubic centimeters (about 3⅓ ounces). This amount is generally considered to be normal. Ninety per cent would be 13.5 Gm., 60 per cent 9.0 Gm. Both hemoglobin and red cells are always measured, because although the red cells may be normal in number the hemoglobin within them may be reduced to less than normal. This is functionally significant, since it is the amount of hemoglobin rather than the actual number of red cells which is important from the oxygen-carrying standpoint. In women, the normal figures for red cell count and hemoglobin are somewhat lower: R.B.C. (red blood cell count) 4.5 million; hemoglobin 12.5-13.5 Gm.

Anemia indicates a reduction in the blood of either hemoglobin or red cells, or of both these factors. For many years it was thought that anemia was either secondary to some cause—"secondary anemia"—or a mysterious disorder of no known cause—"primary anemia." We now know that all anemia is secondary to some more or less well defined cause. Thus anemia must be considered as a symptom of something abnormal going on within the body and a warning that search for this something must be made lest the condition get out of hand before the cause is found. To track down the cause of anemia in a given case is often just as fascinating as the solution of a mystery thriller—and occasionally even more difficult. The methods used in such an investigation are often complex, involving as they do the use of some of the most important developments in recent scientific medicine.

In general, then, anemia concerns the supply of raw materials, their digestion and absorption and their transportation to the marrow. These are not the only causes, since anemia may be due to a loss or destruction of red cells with the result that the normal balance between blood formation and blood destruction is upset. Thus there are three fundamental causes for anemia: lack of supply, excessive loss or destruction of red cells, and defective formation in the marrow itself. In working out the cause in a given case, preliminary to its treatment, these fundamental mechanisms need investigation.

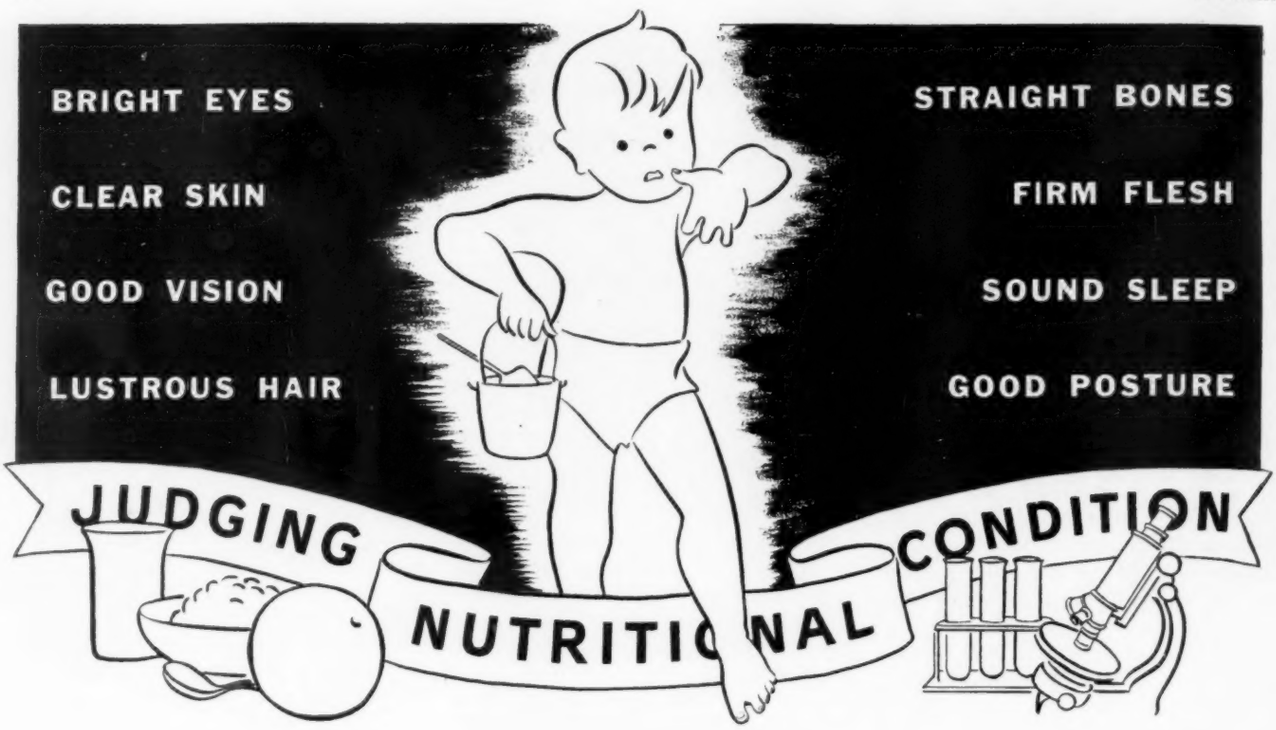
CAUSES OF ANEMIA

1. Poor supply of blood-building material.
2. Excessive loss or destruction of red cells.
3. Defective cell formation in the bone marrow.

The physician first takes a careful history, paying particular attention to such questions as the diet, weight loss, bleeding and similar abnormalities. Careful and complete physical examination is then made with particular reference to the patient's color, the tongue, the glands and the spleen. The laboratory is then consulted. There the various blood counts are performed, not only those of hemoglobin and red cells but also those dealing with the white cells and their various types, the platelets and the early red cells or reticulocytes. Various indexes which give the relationship of hemoglobin concentration to red cells and tell the average size of the red cell are important determinations, since they give clues to the type of anemia. Tests for hemorrhagic factors are important when excess bleeding is a feature. The amount of yellowish pigment (bilirubin) in the blood may help to indicate the degree of blood cell destruction. The blood serum may be tested for syphilis and for evidences of certain other types of infection. Special tests of the cells and serum may be performed. A gastric analysis, in which the stomach juices are removed for chemical analysis, tells whether or not hydrochloric acid is present. Chemical examination of the stools for "occult" blood and microscopic examination for parasites are important tests. X-rays of the stomach, of the chest and of the bones may be indicated. Direct examinations of the blood-forming organs, notably the bone marrow by puncture of the sternum (breast bone), and of enlarged lymph glands may be done. The sternal puncture has assumed great importance in recent years, since it tells what is behind the blood picture and is often of great help in clearing up many baffling cases of anemia. All these investigative methods may be needed to determine whether anemia is caused by deficiency in supply, loss or destruction of blood, or trouble in formation.

An infant kept too long on a purely milk diet, a poverty-stricken mother unable to buy meat or green vegetables, a rather eccentric type subsisting chiefly on tea, toast and tarts—all these will sooner or later become victims of a state of chronic iron deficiency and thus develop what used to be called secondary anemia. Adolescent girls and middle aged women are particularly

(Continued on page 448)



JUDGING NUTRITIONAL CONDITION

By AMALIA LAUTZ

HOW ARE WE to know if we are well nourished? How can we tell if children need a better diet? These are questions which all interested in better health through food try to answer.

The only way of knowing physical condition completely is through a good medical examination with laboratory tests. Disease can be diagnosed exactly only by the physician, especially if it is a disease without some extreme visible symptom, or if the disease is in a mild form or in its initial stages. Only a blood test shows the presence of anemia and a need of more iron or other remedy. A metabolism test, to measure the rate of oxidation by the cells, is essential in ascertaining the exact condition of the thyroid gland. The presence of mild rickets can be checked best by the x-ray. Pains due to insufficient thiamine are similar to pain due to other reasons. To be sure of good health or to find out if specific remedies are necessary, a yearly physical examination is advisable for old and young. Even if health seems reasonably good, the careful physician may discover minor ailments and prevent them from developing into serious discomfort.

There are certain indications of good health and nutrition which even the lay person can observe. A clear, unblemished skin with a healthy glow is one. Eyes that are bright—not bloodshot, sore or itching—and without dark circles and puffiness are other signs of good health and good health habits. So is the ability to see again quickly when adjusting from bright light to a darker room. Hair that is reasonably thick and brushes to a luster shows good nutrition. Muscles are developed normally and flesh is firm, not flabby, in the healthy person.

Posture and skeletal build are further signs of past and present nutrition. Posture, as we commonly think of it, is of especial value as a health indication in children, for they have not had long years to develop postural habits due to carelessness or occupation. Children and older people who feel well have a natural tendency to stand and sit more erectly and alertly than those who feel tired and listless. Children play actively and develop and preserve good posture normally if they are well fed and can be physically free and natural. Good nutrition is shown by a good skeleton with straight legs, arms and back, with even shoulders, flat shoulder blades and a broad chest. After the first, chubby baby curves are lost, the abdomen should be straight and flat. Outcurving "pot bellies" in children show poor nutrition rather than bad habits of standing, especially when the pot belly is combined with narrow chest, bowed legs and bad teeth, which are signs of rickets in the little child on a diet inadequate in calcium, phosphorus or vitamin D.

A little child who is well is active and in good spirits. Malnutrition produces listlessness, lessens alertness and interferes with emotional control. Fatigue results which may go on to overfatigue, and the listlessness may be transformed into inability to relax, rest and sleep. Interest in physical activity, sound sleep and cheerfulness are indications of good nutrition in old and young.

No one weight can be given as the best at any age, for the healthiest weight for individuals of the same age and sex varies greatly according to the body build which they have inherited. Members of some families are most often tall and slim, of others short and squat.

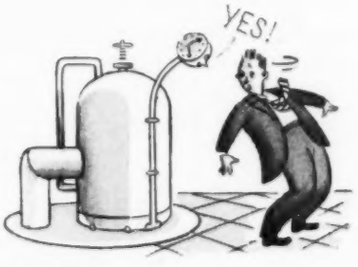
HOW'S AND WHY'S FOR EVERY HUNGRY BABY

by CLAPP'S. specialists in Baby Foods

1. How green is a bean? It's as green as vitamins can make it—because it's going into Clapp's Baby Foods. (Only the greenest, crispest, freshest beans are good enough for Clapp's.)

2. How can you capture a vitamin? Just cook a baby's food in one of Clapp's special pressure-cookers. They keep the air out—so the vitamins and minerals stay *in!*

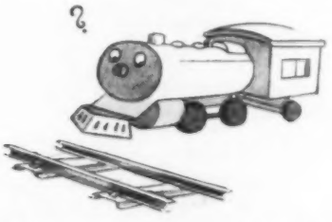
3. Why serenade a soup? Because it's such *wonderful* soup that Clapp's makes for babies! Chicken soup, liver soup, delicious vegetable soups. All kinds of soup —all full of nourishment!



4. Why does the dial say "Yes"? Because the texture's just right. Clapp's *strained* foods are strained fine (but not *too* fine!) for little babies. Clapp's *junior* foods are made coarser for older babies.

5. Why does a doctor dictate? Because Clapp's *asked* him to! Clapp's loves to take dictation from doctors—and to prepare foods just the way that doctors recommend.

6. Why are Clapp's Foods for babies only? Because these foods are so important for babies. And we all must try to make sure that there'll be enough to go around. Rationing helps do this. *You* can help, too—by feeding Clapp's to *babies only.*



7. Why is there just one track? Because Clapp's has a one-track mind about baby foods. Clapp's makes baby foods and *nothing else.* That's one reason they do it so extra well.

8. How many foods for a baby? Clapp's makes 18 strained foods for young babies . . . 15 junior foods for older babies . . . 2 pre-cooked cereals (not rationed!)—Clapp's Instant Cereal and Clapp's Instant Oatmeal. Try them! See how marvelously "Babies Take to Clapp's"!

THIS IS A SKIER

1. *This is a skier.* He likes to slide down snowy hills while standing upright (mostly) on a pair of skis. Skiing is a great sport. Lots of people like it.

THIS IS A FISHERMAN

2. *This is a fisherman.* Fishing is a great sport. Lots of people like it. But outside of the fact that it's a sport, it's nothing like skiing. Why should anybody expect it to be?

3. *This is a cup of coffee.* It is a hot mealtime drink. Millions of people like it. While . . .

4. *This is a cup of Postum.* It, too, is a swell hot drink, liked by millions of people. Beyond that, *Postum is no more like coffee than fishing is like skiing.* But, oddly enough, many people expect it to be. If you are one of them, let us explain . . .

WHAT POSTUM IS LIKE

POSTUM is a hearty, full-bodied drink with a flavor *all its own.* It tastes no more like coffee than coffee tastes like tea. Its flavor is *distinctive* . . . lusty, lip-smacking, soul-warming . . . a flavor that has made Postum the favorite mealtime drink of millions of Americans.

And remember, Postum is the ideal drink for your whole family. There is nothing stimulating or upsetting in it. Get Postum, today! Two forms: Postum Cereal, the kind you boil, percolate or drip, and Instant Postum, made right in the cup simply by adding hot water. Economical, it costs less than one-half cent a cup.

On hot summer days, be sure to try Postum ICED. Wonderfully refreshing!

POSTUM

ONE OF AMERICA'S GREAT MEALTIME DRINKS

Some inherit big, heavy bones and some a skeleton that is light and delicate, though both groups may be well built and healthy. Races and nationalities produce different types of individuals with characteristic body builds and resulting normal variations of weight and height.

What, then, should we do about the tables giving average weights for age and height that we find in nutrition and health publications and that are given on some scales? We need to realize that the tables are based on average weights and not necessarily on the best weights, and to remember that healthy people may depart from them without danger. However, at any age extremes of underweight and overweight are undesirable indications of disturbed nutrition due either to physiologic reasons such as disease or badly functioning glands, or to extreme or habitually poor diet. It has been shown, too, that the death rate in developing children and young people is higher in those who are underweight according to the average tables than in those who weigh more, while, on the other hand, the death rate for people who are over 40 is higher in the overweight group than in those who weigh less than average. As a rule, underweight is the greatest danger to those under 20, when respiratory and other infections take a heavy toll, but in those over 40, when body functions begin to slacken somewhat and physiologic disturbances such as diabetes and hardening of the arteries become more common, overweight rather than underweight is most dangerous to health and life.

Growth and development are better indications of nutrition in the usual child than actual weight at any one time. With freedom from disease and with a good diet, infants, children and young people should grow continuously in height and weight. There may be times when increases in height and weight seem to slacken or even to stop for a short period, but the general trend should be toward fairly continuous growth and development from one month to the next. The most rapid development and increase in proportionate height and weight occur in the first few months of life, which we commonly recognize by saying that the baby should double its birth weight in six months and

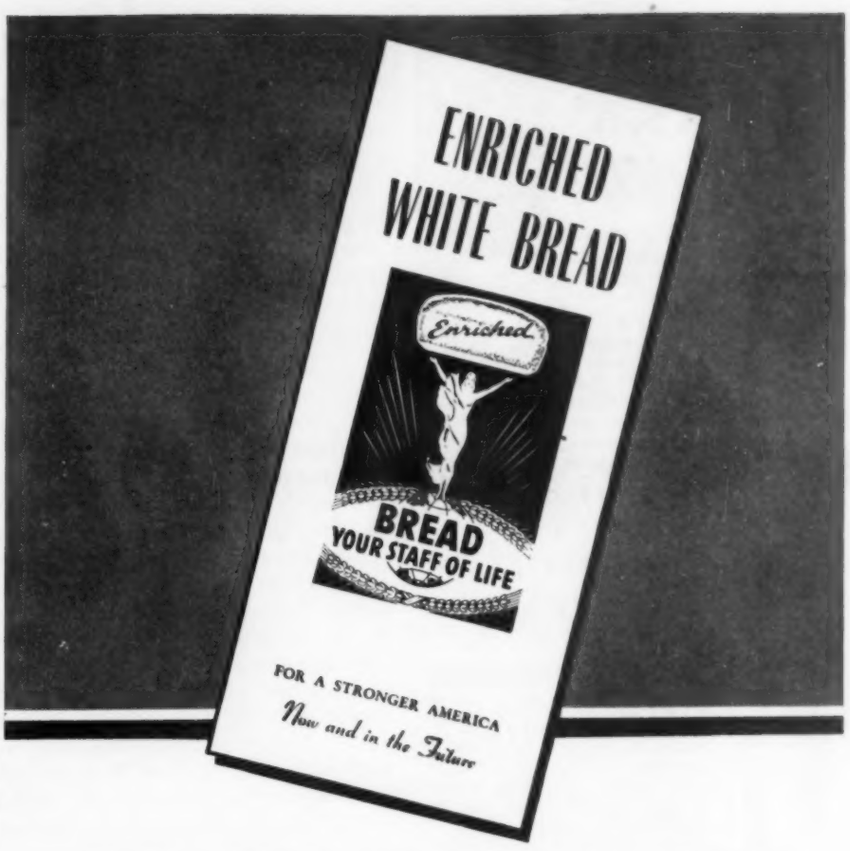
triple it by the end of the first year. These figures show, too, how the proportionate increase in weight begins to slacken within the first year. While weight and height should increase until the end of adolescence, the rate, in general, grows slower and slower as the years go on, and at around 20 years, growth in height stops completely. Just before puberty, or at puberty, there is often a sudden spurt in height, which seems to get ahead of weight, and boys especially seem extremely thin. However, this is followed at or after puberty by increased weight and "filling out," if the boy or girl is healthy and on a good diet. It is important to weigh enough throughout this period when underweight adolescents have shown a higher death rate than those who are plump.

After 25, the increase in weight is different in various persons. While the majority gain, many do not, depending on food habits and physiologic conditions. The way to avoid obesity in later life is to keep the weight from increasing after the age of 30. A well functioning, vigorous and slender body, with youthful characteristics after middle life, is the surest indication of good dietary habits.

BETTER NIGHT VISION

Soviet physiologists now possess methods which infallibly secure maximum adaptation of the human eye to darkness within five or six minutes after passing from light to darkness, Krikor Kekcheyev, Nikolai Derzhavin and Sergei Pilipchuk of Moscow, Union of Soviet Socialist Republics, declare in the current issue of *War Medicine*.

The three scientists say that "An important problem in war is that of expediting the period of adaptation of the eye in passing from light to darkness. Until recently only one method of shortening this period was known; If before passing into darkness a person was kept in weak, instead of bright, light, it was possible to reduce the period of adaptation from forty-five or fifty minutes to twenty-five or thirty minutes. Soviet physiologists now possess methods which infallibly secure maximum sensitivity not within half an hour but within five or six minutes."



YOU CAN'T OVERESTIMATE THE WAR-TIME IMPORTANCE OF ENRICHED WHITE BREAD

Save to buy Bonds!

Conserve on food to help feed our fighting men and our allies!

Thrift and thrift and more thrift is the order of the day—and will continue more and more with every day in war-time America!

That's where Enriched White Bread enters the picture.

Extra nourishment has been added to our greatest source of food energy! White Bread has become Enriched White Bread* — essential vitamins and minerals added. Yet it is still one of America's thriftiest foods —for the dining room table—for the dinner pail—for the school lunch box. Whenever you serve food—serve Enriched White Bread. It's thrifty! It's patriotic!

A letter or card is all that is necessary to receive your copy of ENRICHED WHITE BREAD—a popular leaflet setting forth in detail the new nutriment that has been added to bread. It includes a reprint of a government chart. Statements by leading physicians! Explains exactly why ENRICHED WHITE BREAD should be served in every home today.

Department of Nutrition
AMERICAN INSTITUTE OF BAKING
10 ROCKEFELLER PLAZA, NEW YORK, N. Y.

* *Enriched with thiamine, niacin and iron.*

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

SEND THIS COUPON

Please send me your literature on "Enriched White Bread."

Name .....
Street .....
City ..... *State* .....

HIS

From FRUIT at its sun-ripe best

Dr. Phillips

PURE CITRUS JUICES

Grapefruit; Orange; Blended Orange and Grapefruit provide Vitamins A and B with an abundance of VITAMIN C plus DEXTROSE Food-Energy Sugar

DR. P. PHILLIPS CANNING CO., ORLANDO, FLA.

America's Favorites

THIS TOMATO JUICE IS NEVER THIN OR WATERY

High retention of nutritional values because made by patented process. The Sun-Rayed Co., Frankfort, Indiana.

KEMP'S SUN-RAYED PURE TOMATO JUICE

DURKEE'S DOUBLE FLAVOR VEGETABLE MARGARINE

• Made by a new process that whips the goodness of the pure, pasteurized fat-free milk and wholesome vegetable oils right into the product.

DURKEE FAMOUS FOODS. Chicago, Ill., Norwalk, O.

THIS

Eating Business

WATCH YOUR DIET
By E. M. Geraghty. 8 pages. 10 cents.

POCKET CALORIE INDEX
Compiled by Esther Bogen Tietz, M.D., to aid in gaining or losing weight. 10 cents.

OBESITY
Contains several recipes for proper diet. 48 pages. 15 cents.

REDUCING DIETS
By E. M. Geraghty. Recipes for making the prescribed dishes. Shows proteins, carbohydrates, calories, vitamins and minerals. 30 pages. 15 cents.

HOW TO GAIN WEIGHT
By Laura A. Miller. Advice to the underweights. 8 pages. 10 cents.

A DIET HINT FROM PHILADELPHIA
By Wilmer Krusen. Ice cream as a food. 6 pages. 5 cents.

NERVES AND INDIGESTION
By Walter Alvarez. 4 pages. 5 cents.

Order from . . .

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

Nutrition of the Pregnant Woman

(Continued from page 419)

In goiter zones, iodine also requires attention. The sufficiency of all these minerals is important in the interests of both the mother and the child, as will be pointed out.

CALCIUM

To insure proper bone and tooth development of the unborn child and to protect the stores of the prospective mother, a diet adequate in calcium is a "must." There is absolutely no justification of the old adage about losing a tooth for every child. Investigators have found out that there is an additional fetal need for calcium from the third month on and that the heaviest demand is during the last two months of prenatal life. During this period approximately two thirds of the total prenatal calcium is laid down. According to one authority, the normal child has a store of calcium at birth to draw on during the period of rapid growth of the first four months of life, and premature infants do not have this reserve. He believes this explains why the normal infant does not develop rickets until after the fourth month, when this reserve is depleted. A high calcium diet is not injurious to the prospective mother. The calcium retained by the pregnant woman is used to fulfil the needs of the fetus, to replenish any impoverishment that may exist in her body, and to provide a storage in the bones. The pregnant woman who drinks a quart of milk and eats two or more servings of fruits and vegetables a day may be sure that her calcium requirements are being adequately met.

IRON

Another important mineral is iron, which is essential for the blood building of the mother and fetus. In the pregnant state, adequate hemoglobin is essential for furnishing the tissue with sufficient oxygen. This supply is necessary during gestation for maintenance of the maternal organism, for growth of the fetus, and for storage in the fetus to provide for the lack experienced during the early months of life, when milk is the safe food.

Thumb-sucking... Nail-biting can be discouraged

Thumb sucking and nail biting are unhealthful habits of children. Don't resort to bribes and promises, use THUM. Directions on bottle. Remove from fingers with nail polish remover.

USE THUM TRADE MARK

EASY TO USE
APPLY LIKE NAIL POLISH
SOLD AT ALL DRUGSTORES
50¢

THUM contains capsicum 2.34% in a base of acetone, nail polish and isopropyl.

WONDER STORIES of the HUMAN MACHINE

by Dr. George A. Skinner

Ten fascinating pamphlets on the human body and its construction. Each pamphlet covers in detail one of the principal organ systems . . . describes its function, tells how it works in conjunction with the rest of the body. Simply styled, interesting and of such authority as to be generally useful for both home and school use. Specially suitable for use in the teaching of physiology.

1. Framework (Bones)
2. The Running Gear (Muscles)
3. Breather Pipes and Thermostatic Control (Lungs and Skin)
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5. The Electric System (Nerves)
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15c each—complete set in box, $1.00

AMERICAN MEDICAL ASSOCIATION
535 No. Dearborn St. · Chicago

Meat...

A "Sparkplug" of Proteins for Growth and Tissue Repair

IT IS an interesting story, this matter of proteins and healthful nutrition.

In war-torn Europe, in the countries under the heel of Hitler, there are children, spindle-legged, pot-bellied, with wasted muscles and other tissues; men and women, the same way: Protein starvation —lack of the amino acids that build and repair muscles and tissues.

That is why you have heard so much about proteins lately. They are needed for good nutrition, fully as much as the vitamins. What are these proteins, and how many kinds are there?

Excepting sugar and pure fats, all foods contain protein: Note these values:

GREEN VEGETABLES	1% to 4%
BEANS AND PEAS	5% to 7%
MILK	3½%
BREAD	8% to 9%
EGGS	11% to 12%
MEAT, LEAN, COOKED	25% to 35%

Of all the natural protein sources, meat is the most concentrated, the richest.

All proteins are composed of amino acids. They are the substances which the body uses to build and rebuild its tissues. Of the 22 different amino acids known, 10 are called "essential" because they must come from the food we eat. The other 12 are supplied abundantly in foods, but they are called non-essential because they can be made by the body from the 10 essential amino acids.

Only few foods contain all the ten essential amino acids; milk and cheese, eggs, fowl, and of course meat. In the vegetable kingdom the combination of all the essential amino acids is rarely found.

For good nutrition proteins are needed, daily, from the first day of life to the last. But they are needed not only in sufficient quantity; a certain portion of the proteins you eat must be of that high quality which contains all ten of the essential amino acids of which meat is the richest source.

A reasonable amount of meat daily makes sure that your total protein supply—from all the other sources—becomes "biologically adequate." In addition meat gives you the important B-vitamins thiamine, riboflavin, niacin, and the needed minerals (iron, copper, phosphorus).

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED AMERICAN MEDICAL ASSN Council on Foods

American Meat Institute

CHICAGO

A deficient maternal intake of iron may provide sufficient reason for the anemia so common during the latter half of pregnancy. There is an additional need of iron during pregnancy. It has been found that over half the iron is stored during the last two months of pregnancy. Foods rich in iron are meat (liver), egg yolk, leafy vegetables, whole grain cereals and dried fruits. There is evidence to show that any iron above the needs of the maternal organism is stored in the liver, so there is no danger of having too much.

IODINE

Iodine is another mineral that should be given special attention. People who drink water or eat foods lacking in iodine frequently develop an enlargement of the thyroid gland, commonly called goiter. The common occurrence of simple goiters during the pregnancy period is indicative that there is an increased need and that an adequate supply of iodine during pregnancy is important. When the ordinary foods and drinking water of a region are poor in iodine, the daily use of iodized salt and biweekly consumption of sea food is desirable. In some cases, small doses of medicinal iodine may be prescribed by the doctor for prophylactic or curative treatment. It is important, however, that iodine therapy be administered only under medical supervision.

VITAMIN A

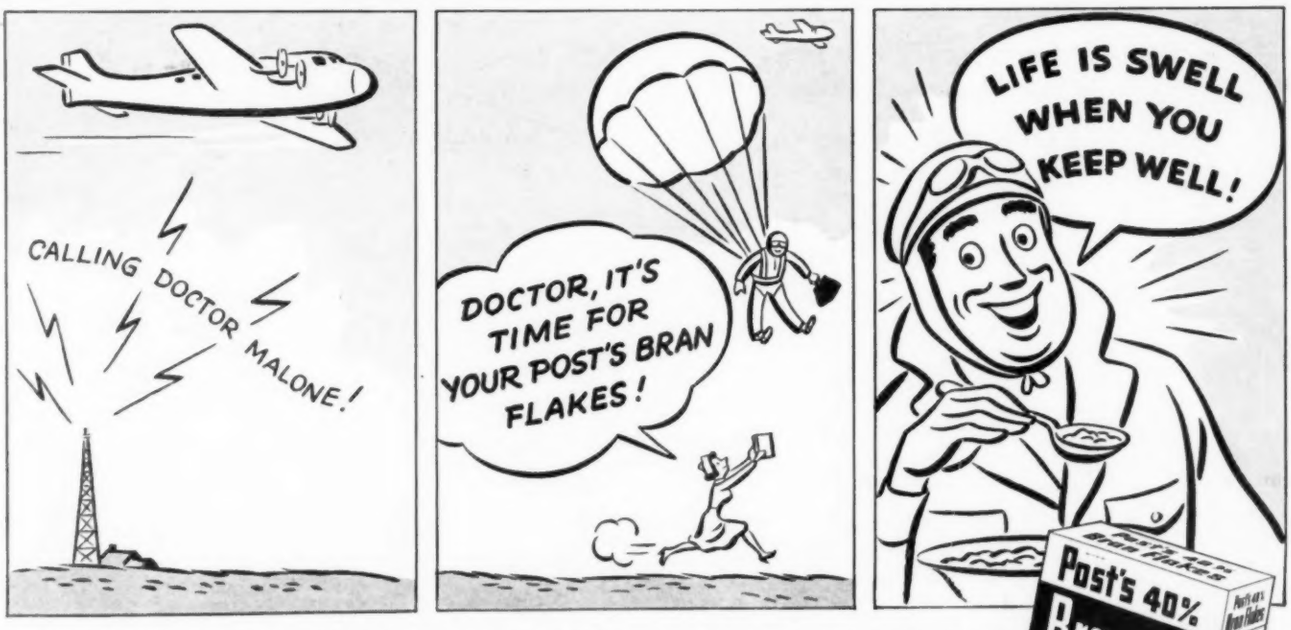
Vitamin A is essential for reproduction as well as for normal growth and development. Although the body can store vitamin A in relatively large amounts, the demand for this vitamin during pregnancy is greatly increased, and unless the diet includes a liberal amount, deficiency may result. Vitamin A is comparatively easy to get, and additional amounts will do no harm. The best food sources are whole milk, cream, butter, cheese, egg yolk, leafy green and yellow vegetables. Cod liver oil is a concentrated source of this vitamin as well as vitamin D and may be used advantageously.

VITAMIN B_1

The demands of pregnancy also increase the need for vitamin B_1, or thiamine. In adequate amounts it stimulates appetite and growth and is necessary for normal reproduction. Deficiency in vitamin B_1 in prolonged and severe cases appears to contribute to the nervous disorders and disturbances of pregnancy. Foods rich in vitamin B_1 are whole grain or enriched cereals, pork, vegetables, fruits, milk and egg yolk.

VITAMIN C

The requirement for vitamin C or ascorbic acid is also increased during pregnancy. Evidence of lack of vitamin C among expectant mothers is often seen in the condition of teeth and gums. Vitamin C also plays an important part in the bone and tooth development of the baby. Extreme deficiencies result in scurvy. Vitamin C requirements are difficult to meet unless such citrus fruits as oranges, lemons, grapefruit and limes or tomatoes are included in the diet. Since vitamin C is the most easily destroyed of all the vitamins, little can be counted on unless foods are eaten raw. Cabbage is an economical source of vitamin C. Potatoes contain only fair quantities of this vitamin, but the amount of potatoes sometimes included in the day's diet supplies an appreciable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DOCTOR, IT'S TIME FOR YOUR POST'S BRAN FLAKES!
LIFE IS SWELL WHEN YOU KEEP WELL!
Post's 40% Bran Flakes
NEW! CRISPER!
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Now—Whole-Grain Nourishment of Wheat, plus Bran Benefits!

Cereals—whole-grain, enriched, or restored—rate high in our government's new nutrition program. They're featured under Group 6 in the Basic Seven Food Group plan.

Post's 40% Bran Flakes—the *only* nationally advertised, nationally accepted bran flakes—supply whole-grain nourishment of wheat . . . meet or exceed whole-grain levels of thiamin, iron, and niacin . . . and also supply important calcium and phosphorus.

In addition, Post's Bran Flakes are a mild cereal regulative. They provide enough extra bran to help prevent constipation due to lack of bulk in the diet.

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Before Your Baby Starts On STRAINED BEETS !

You owe it to him to taste his food—to check the flavor, color, texture! You'll see why so many mothers buy *Heinz* Baby Foods with their ration points!

OF COURSE your youngster's meals cannot be rich and highly seasoned like adult fare. But just taste Heinz Strained Foods—notice the tempting flavor, the fresh, natural color, the full-bodied texture—and you, too, will spend your ration points for these baby foods!

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● Firm, luscious vegetables—prize-winners the like of which you rarely see on the open market—are raised in fertile fields near Heinz factories so they can be rushed to our kitchens at their fresh, flavorful prime. There they are cooked scientifically and vacuum-packed[1] in enamel-lined tins!

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Choose From 17 Strained Foods

1. Vegetable Soup with Cereals and Yeast Concentrate. 2. Beef and Liver Soup. 3. Tomato Soup. 4. Mixed Greens. 5. Spinach. 6. Peas. 7. Beets. 8. Green Beans. 9. Carrots. 10. Asparagus. 11. Mixed Cereal. 12. Prunes with Lemon Juice. 13. Pears and Pineapple. 14. Apricots and Apple Sauce. 15. Apple Sauce. 16. Beef Broth with Beef and Barley. 17. Vegetables and Lamb.

12 Delicious Junior Foods — Chopped, Mildly Seasoned, Highly Nutritive — Specially Prepared To Bridge The Gap Between Strained Foods and Family Meals

1. Creamed Diced Vegetables. 2. Chicken Farina Vegetable Porridge. 3. Chopped Green Beans. 4. Creamed Green Vegetables. 5. Creamed Tomato and Rice. 6. Chopped Spinach. 7. Chopped Carrots. 8. Chopped Mixed Vegetables. 9. Lamb and Liver Stew. 10. Pineapple Rice Pudding. 11. Prune Pudding. 12. Apple, Fig and Date Dessert.

57 THESE TWO SEALS MEAN PROTECTION FOR BABY

HEINZ Baby Foods

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Falling high chairs cause many serious and fatal accidents each year. Your Baby is ever so much SAFER in a BABEE-TENDA Safety Chair because it is low and can't be tipped or pushed over. A Safety Halter Strap positively prevents Baby from climbing out. "SAFETY FIRST" is the best policy—the BABEE-TENDA Safety Chair is highly endorsed by leading Baby Specialists, Hospitals, and Nurses. *It is about as high as the seat of a dining-room chair, 22" high by 25" square.* Can be used outdoors and is easily rolled from room to room. Folds compactly for traveling. After baby outgrows the seat, it can be converted into a sturdy play table.

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HERE'S an easy way to make milk, nature's most nearly perfect food, more readily digestible. Just add ½ "Junket" Rennet Tablet to a glass of milk, stir until dissolved, let stand 10 to 20 minutes, then drink. That's all.

When the milk reaches your stomach, the rennet causes it to form soft, fine, easily digested curds. This is the first step in digestion . . . and results are amazing. Anyone who has had difficulty digesting milk should try rennetized milk. "Junket" Rennet Tablets come in handy vest-pocket or purse-size tubes of 12. At druggists and grocers.

FREE TRIAL OFFER

"THE 'JUNKET' FOLKS." Chr. Hansen's Laboratory, Inc., Dept. 336, Little Falls, N. Y.

Please send me FREE SAMPLE packet of "Junket" Rennet Tablets and your illustrated recipe book of rennet-custard desserts.

Name.....

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City.....

amount. Lettuce, celery, radishes and onions are also fair sources of vitamin C, and because these vegetables are usually eaten raw, they make some contribution to the vitamin C need.

VITAMIN D

Adequate amounts of vitamin D are important in promoting the utilization of calcium and phosphorus. It is probably advisable for the pregnant woman to include at least one teaspoon of cod liver oil in the diet each day during pregnancy—especially in the winter months—as a protection both to the pregnant woman and her child. In regions where the woman is exposed to large quantities of sunshine, her vitamin D needs may be obtained without taking cod liver oil.

OTHER VITAMINS

In addition to B_1, other members of the vitamin B complex which have been shown to be essential in human nutrition are riboflavin, niacin and B_6. It is probable that a diet adequate in other respects will also be adequate in these vitamins.

The function of vitamin E in human nutrition is not clearly understood, but scientific work indicates that it is probably essential. This vitamin is widely distributed in foods and is stable to ordinary methods of cooking. Therefore, there is little danger of deficiency. Too much stress cannot be put on the importance of spending a larger proportion of the food budget for "protective" foods such as milk, fruits, vegetables, eggs and whole grain or enriched products and of spending a smaller proportion of the food budget for white sugar and highly refined cereals.

To the person who is unfamiliar with food constituents expressed in grams or milligrams of minerals and units of vitamins, the plan below interprets the needs of the pregnant woman in terms of the foods themselves. In this outline will be found a simple, daily diet of natural foodstuffs so constructed that it will ensure the expectant woman's meeting the essential dietary requirements of pregnancy.

DIET DURING PREGNANCY

Milk: One quart daily is desirable throughout pregnancy. Milk may be consumed as a beverage with meals or between meals, or it may be cooked into foods such as custards, cream soups and creamed dishes.

Vegetables: Two servings of vegetables, besides a potato, should be included daily in the first half of pregnancy; three vegetables in the latter half. It is highly desirable to have one of these vegetables served raw as a salad. (An average serving of cooked vegetables is equivalent to half a measuring cup of vegetables which are loosely packed.) Leafy green vegetables, such as lettuce, spinach, cabbage, dandelion greens, chard or broccoli, are good choices and should be included at least twice a week.

Fruits: At least two servings daily in the first half and three in the latter half of pregnancy are recommended. One of these should be a citrus fruit (such as orange or grapefruit) or tomato. One may be cooked (prunes, baked apples, stewed apricots, etc.).

Egg: One should be included daily.

Meat: One liberal serving of lean meat (about 3 ounces) should be included daily. Liver is valuable and should be eaten once a week.

Other protein food: One serving a day of one of the following should be included, at least in the second half of pregnancy: fish—such as canned salmon—once or twice a week; cheese—American or cottage; beans—navy or kidney.

Whole grain or enriched breadstuffs and cereals: Whole grain or enriched bread and cereals should be used exclusively. (One half cup of cereal when cooked equals approximately an average slice of bread ½ inch thick.)

Potato: At least one liberal serving a day. Potato may be substituted for some enriched whole cereal if desired. Such a substitution would increase the vitamin C in the diet.

Butter: Should be used in moderate amounts.

Cod liver oil: Or its equivalent, 2 teaspoons daily. If the woman is out in the sunshine, 1 teaspoon may be adequate.

Iodized salt: Its use is highly desirable.

Water: Six to eight glasses daily are advisable.

Supplementary foods: To furnish flavor and variety and to supply the additional needed calories.

What! An operation in a dairy plant?

Well, frankly, we've never heard of an operation being performed in a dairy. But the idea does help to illustrate the almost *aseptic cleanliness* which the Sealtest Laboratory System demands in every Sealtest Dairy.

We wish you could be present after the milk has gone through for the day. You'd think we were taking the plant apart, the way we dismantle pipe lines, tanks and machines. Everything through which milk has passed must be scrubbed with special cleansing solutions; then sterilized with live steam. Walls and floors get the same careful treatment.

Why, we make one hundred and fifty regular inspections of plant housekeeping alone! In addition, scores of tests are conducted in each Sealtest Dairy Laboratory by skilled laboratory technicians.

The Hidden Element

These services, and many more, go to make up what we call the HIDDEN ELEMENT in Sealtest Milk . . . an element which gives *extra* assurance of quality and purity.

Sealtest Milk is sold in thousands of communities under the red-and-white Sealtest Symbol.

Sealtest MILK

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TUNE IN THE SEALTEST PROGRAM, THURSDAY EVENINGS, NBC NETWORK

Anemia

(Continued from page 437)

vulnerable. The skin becomes flabby, wrinkled and pale; the tongue red and shiny; the hair dry and gray; and the finger nails brittle, ridged and flattened. Weakness, easy fatigue, palpitation of the heart and digestive symptoms are common. The blood shows a real drop in the coloring matter or hemoglobin, while the red cells themselves are not greatly reduced. Many patients show lack of hydrochloric acid in the stomach, bespeaking some difficulty in digesting iron-containing foods. In some, the intestines have been at fault. In most cases, there has been an excessive loss of blood in menstruation, or many pregnancies—with or without miscarriages—have occurred. Since poverty, poor quality food and many pregnancies go together this type of anemia is seen most commonly in the lowest income groups. Hemoglobin concentrations as low as 20 to 30 per cent of normal may ensue. The response to adequate doses of iron in this state of chronic iron deficiency is almost fantastic: The hair takes on a new luster, the skin loses its flabbiness, the tongue becomes coated (contrary to popular belief, the normal tongue shows a thin coating), the finger nails lose their flatness. Up goes the hemoglobin—7 to 10 per cent or more a week—and with it soar the spirit and the sense of well being. Usually, a small dose of iron must be continued when a normal hemoglobin value is reached, or else relapse occurs. If there is still excess bleeding, this must be corrected.

Pernicious anemia—this term is now outdated—is a closely related state. Here the stomach is chiefly at fault; for years it has failed to digest beef stuffs properly. The liver is pretty well depleted; the bone marrow doesn't get its red cell-building blocks and anemia develops. But the whole body suffers too. The hair becomes gray early in life; the tongue loses its coat and becomes easily irritated; bowel function is disturbed; peculiar "pins and needles" feelings become bothersome in the fingers and toes; and after a while the legs become stiff and crippled. In other words, this isn't really just a blood disease, it is a deficiency state in which the whole body becomes starved for liver extract. Every tissue needs iron, liver extract and vitamin B to carry out its complex functions. Depleted of these essential substances, everything goes awry, particularly the marrow and red cell growth. The red cell producers go on a sit-down strike—they produce fewer and fewer cells, and these are misshapen and unusually large. The red cell count goes down and down and may reach as little as half a million in a severe case. At the same time, jaundice develops and the patient's skin takes on a lemon yellow hue.

Prior to 1926, almost every patient with this condition died. The anemia was truly pernicious; it was one of the mysterious "primary anemias." Thanks to the researches of G. H. Whipple and G. R. Minot of this country, it is no longer pernicious or primary. Fundamentally the stomach is at fault, although other factors such as the diet may be important. Whipple's work with dogs showed that their experimentally produced anemia was best treated with liver. Minot's prepared mind accepted the suggestion of a possible deficiency state in the human disease, and as a result of these cooperative studies which led to the Nobel prize countless thousands of patients have been snatched from untimely deaths. The response to liver by mouth or liver extract by injection into the muscles can be described as nothing short of miraculous. In a few days, the appetite becomes ravenous, the spirits improve, the tongue loses its vivid red appearance and the skin its deathly yellow pallor. A pink color comes to the cheeks and lips, the heart beats more slowly, the intestines function better and the strange feelings in the fingers and toes improve.

Simultaneously, the blood itself shows dramatic changes. Up jumps the proportion of young cells (reticulocytes) released from the marrow, and in less than a week the total red count itself begins to go up, almost by leaps and bounds. In a severe case it is not unusual to see the red count jump from less than a million per cubic millimeter to three million in two weeks or so. In about a month, the red count has reached normal limits and in some persons even goes above the normal.

To obtain these results, adequate amounts of liver, liver extract, liver extract solution or stomach extract must be given. All are effective. Liver may be taken either raw, ground in a tomato juice cocktail or broiled. Calves' liver is tastiest. Liver may be given in the form of the original liver extract powder in doses of several vials a day. But the method most commonly used nowadays is to inject a solution of the extract into the muscles. This is the method of choice because we know it goes in, we know how much goes in and we know it is all absorbed. Moreover, the patient is kept under observation. Liver given by mouth may not all be absorbed or utilized. A patient not kept under observation will often disregard his liver treatment and will then gradually relapse to his original condition. Because this is a permanent disorder which needs to be persistently supplied with liver, the patient who gets his liver extract regularly maintains his red

FREDERICK GRANT BANTING

Death beckoned to him when his noon was high,
But all across the lands are grateful hearts
Remembering that they were marked to die
Before him. Healing was his choice of arts.
He felt some deep and solemn inward urge
To strike life's enemy a telling blow,
So he laid hand upon a mighty scourge
And grappled with it till he laid it low.

He who pushed back the hour of death's dark shade
For others, now has heard it strike for him.
He who kept countless graves from being made
Has found his own among the shadows dim.
Now Destiny awaits some other one
To carry forward what he has begun.

—Clarence Edwin Flynn.

count and avoids crippling disease of the extremities. On the other hand, the uncooperative patient winds up with stiff, paralyzed legs or even brain disease. Liver, although it is brilliantly effective, does not cure the fundamental disturbance but keeps it completely at bay. Liver extract is by no means a cure-all. It has no value in the presence of an anemia due to iron deficiency and is useless in other types of anemia and in the so-called anemia which is so common in sallow, neurasthenic women. Its routine use in any and every case of anemia is not only expensive but often productive of much delay in the discovery of such fundamental causes for anemia as hidden hemorrhage, cancer, thyroid deficiency and others. The same criticism holds true for the numerous fancy named and fancy priced preparations which flood the market and which contain (among other materials) iron, liver extract, vitamin B complex, copper, manganese and so on, *ad nauseam*. Liver extract is of value in one condition only—liver extract deficiency; its use in other states may be considered unwise.

Anemia associated with deficiency in the vitamin B complex is rather unusual in the Northern section of the country, except perhaps in those people who have become particularly vulnerable. We see it occasionally in the poverty stricken, especially when the gastric juice has little digestive function. More often we see it in the confirmed alcoholic: Sooner or later, his appetite for food wanes and finally disappears, although his calories are kept up by his undiminished thirst. His stomach lining becomes so badly burnt that it fails to produce potent digestive principles; he vomits; his bowels become irritated and discharge what little sustenance has been provided; and finally his liver becomes damaged. It is no wonder, then, that he develops the deficiency state known as pellagra, and with it a type of anemia which somewhat resembles pernicious anemia. Pellagra is most common, however, in the South, among certain of the population living on a less than subsistence level. As the body becomes depleted of essential B vitamins, the tongue becomes fiery red, even purplish; sores develop about the corners of the mouth; the hands and forearms are the site of a red, scaly eruption; the mind becomes affected; and anemia develops. Although a crude liver preparation may be effective, since it contains some elements of the B complex vitamin, it is not nearly as potent as large amounts of the vitamin itself, either in the form of yeast or some of the synthetic materials on the market. Closely allied to both pernicious anemia and pellagra is a condition seen more commonly in the tropics and known as sprue. Here there is much diarrhea with the passage of bulky stools, a variable degree of anemia, and, as with other deficiencies, a red tongue. The tongue is thus a sensitive barometer of certain deficiency states and reflects more or less accurately the condition of the stomach lining. The old general practitioner looking at the patient's tongue may well have had an inkling of its significance in disease.

LOSS OF BLOOD

We have paid a great deal of attention to the anemias due to a lack of various essential substances, but it should be realized that actual loss of blood is by far the most common—and certainly the most direct—cause for the development of anemia. Here women are by far

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Two Months of Educational Rehabilitation

For boys and girls requiring a specialized educational program.

Devereux Pine Camps, on the shores of Lake Embden, North Anson, Maine, provides outdoor summer camp life. Rustic cabins with modern facilities. Summer session of Devereux Schools.

HELENA T. DEVEREUX, *Executive Director* — JOHN M. BARCLAY, *Registrar*

Devereux

(Incorporated as a school not for profit)

Box G — Devon, Pa.

Dura-Gloss picks you up . . .

Working hard for Victory? Look at your nails. Are they bright and beautiful? Give yourself a manicure with Dura-Gloss. Bright nails mean bright spirits, and bright nails are Dura-Gloss' business! It wears better, too, because it contains a special ingredient, Chrystallyne, for that very thing. So get DURA-GLOSS today.

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the most vulnerable, for beginning with adolescence they lose anywhere from 50 to 150 cc. (2 to 5 ounces) of blood every month with the menstrual cycle. Then again, each successive pregnancy depletes the mother's iron stores, for the growing fetus—a parasite living for nine months solely on the mother's resources—abstracts hemoglobin and other blood-building substances. These more or less normal and regular happenings do no particular harm providing the diet, the stomach juices and the intestines are in good order. If not, or if the bleeding is excessive—as from miscarriages—then mischief ensues. Excessive bleeding in women may also be due to fibroids of the uterus or to the lowly hemorrhoid. In men, nose bleeds or bleeding from hemorrhoids or from some hidden cause in the stomach or bowels may cause a great reduction in hemoglobin, although the red cell count itself may not be greatly affected. In such cases, careful search must sometimes be made for the source of the bleeding, and here examination of the stools for "occult" blood is all important. Many cases of obscure anemia, treated without effect for months or years with iron, liver extract and vitamin B, finally yield their mystery when examination of excretions from the bowel reveal microscopic blood and careful x-rays demonstrate the site of the blood loss. Nowadays, in the stress of war, another special cause has developed for the loss of blood. The donation of blood represents a call on our own blood-building factories to produce precious blood for our wounded soldiers. The withdrawal of 500 cc. (1 pint) of blood once every two months is readily made up, providing there is no other cause for blood loss and providing the diet and all other complicated steps in blood-building are well maintained. A woman probably should not be bled more than once every three months and should in addition take iron pills to keep her iron stores from becoming depleted. Iron is the treatment of choice in blood loss; it is not the red cells themselves which are at fault, since these can quickly be made up by overtime production, but their contained hemoglobin pigment, of which iron is an important component, is lost to the outside world.

Another radically different type of blood loss is that due to too rapid destruction of blood cells within the circulation (hemolytic anemias). Yellow bile appears in excess, since bile is directly derived from red hemoglobin, and anemia and jaundice become prominent. The spleen becomes enlarged and on occasion must be removed to stop further blood destruction. There are all kinds of hemolytic anemias—hereditary, acquired, splenic, chemical, toxic and many others. Hereditary types include those common in Mediterranean people—Italians, Greeks and Syrians—and in the colored race. Among the acquired types, which are seen nowadays more and more often, the sulfa drugs not infrequently set off the spark which lets loose the forces of blood destruction. Such cases respond to carefully administered transfusions, but those of more obscure origin often require removal of the spleen. One of the most dramatic events of medical practice is to see a patient whose blood is being drained, it would seem, by some obscure monster, revive once the spleen is removed.

Thus far we have discussed anemic states caused by lack of material and by loss of finished products. There remain the anemias caused by actual trouble in the blood-forming "factories" in the bone marrow. Working at peak activity in situations where red marrow is present, large numbers of primitive red cells grow, mature and push their finished product into the blood stream. Very little wasted space is present in these subterranean stations, and yellow globules of sluggish fat are rare. At times, however, the yellow marrow fat becomes increased at the expense of the busy red elements, and a condition known as "aplastic anemia" develops. Although this lack of the normal cellular growth may be spontaneous, it is usually due to some specific cause, among which chemical poisoning is common. Thus, workers exposed to the chemical fumes of benzol or of closely related chemicals which are quickly vaporized may develop anemia or a reduction in white cells or platelets. This occurs in synthetic rubber plants or in industries in which rubber solvents are used, as in the manufacture of raincoats and rubbers. Paint removers, die cleansers and other volatile chemicals may also contain large proportions of benzol. Most industries in which benzol is an important hazard have taken stringent steps either to substitute danger-free solvents for the benzol or to ensure adequate ventilation. Prevention must here be the watchword, since a marrow once severely damaged by a poisonous chemical is difficult to bring back to normal. Transfusions of fresh blood are temporarily helpful and will occasionally keep the patient going until the marrow makes a spontaneous recovery. Liver extract, iron and the vitamin B complex are unfortunately useless. Milder forms of fatty marrow occur when the thyroid gland loses its function (myxedema) or when the kidneys become progressively diseased (nephritis).

Many cases of anemia which look aplastic are really due to sabotage of the marrow effort by such fifth columnists as leukemia and malignant tumors. Of these by far the most common is that arch type of all that is evil, leukemia. The white cells of leukemia, like weeds in a fair garden, overgrow and displace all the normal cells in the marrow, with the result that anemia rapidly becomes a prominent feature. Sometimes, the leukemia remains hidden (aleukemic) and it is only through such special tests as puncture of the breast bone that one can make a certain diagnosis. Unfortunately, once the diagnosis is made in the rapidly progressive or acute case, there is little one can do. Medical science has thus far been baffled by this strange disease which is probably akin to the cancers. However, in an age which has seen the conquering of pernicious anemia by liver, streptococcus and pneumococcus infections by the sulfa drugs and the hemorrhagic element in certain cases of jaundice by vitamin K, there is hope even for leukemia.

ERROR

In the table on page 359 of HYGEIA for May 1943, the daily requirement for nicotinic acid (niacin) in the diet of an active adult male is given as 2.3 milligrams. The requirement should be shown as 23 milligrams.

Three sizes 25¢, 65¢ & $1.00—At drug and department stores. *Literature on request.*

INDUSTRIAL physicians report that loss of time, especially following weekends, is often caused by painful sunburn. SUTRA,* the selective sunfilter cream, is one answer to lowered production, for SUTRA permits the entrance of the desired tanning rays, as it shields against those that harm. Don't let painful sunburn, blistering and peeling interfere with your fun or mar your leisure hours.

SUTRA can help in the war effort by preventing loss of work through painful sunburn. A thin layer quickly applied before exposure, is non-greasy, will not stain, is delicately scented. Made as carefully as a fine pharmaceutical preparation.

Accepted for advertising in the Publications of the American Medical Association.

SUTRA SUNFILTER CREAM

Artra Cosmetics, Inc., Distributors
Bloomfield, New Jersey

*Reg. U. S. Pat. Off. U.S. Pat. Pend.

THE FIRE TORCH IN PLAGUE CONTROL

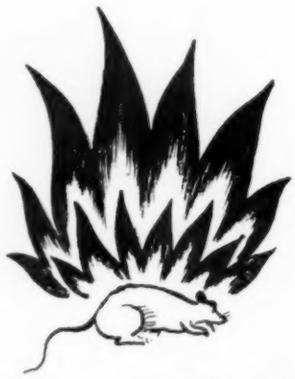
(*Continued from page 421*)

communities. If, for example, a rat has his home in the ditch banks or walls next to a cotton, wheat or corn field, he can hardly be expected to relish the poison in preference to the tasty corn or wheat grains, or the cotton seeds. Rats in the sewer ditches in towns have no trouble finding abundant food to their liking, and rats would not stay in dwellings if food were not accessible.

Another deficiency of poison is that it does not kill fleas. Recent studies in South America have strengthened the supposition that one factor in the spread of plague is the persistence of fleas in rat nests, even when the rats themselves have died or moved from the nest. Newcoming rats, or young rats, are infected by these fleas, they spread them in turn and a plague epidemic may thus begin. Hydrocyanic acid gas and cyanogas have the advantage over poison that the fleas as well as the rats are killed when it is correctly used. Unfortunately, this method is limited, as the gas must enter a closed place to be most effective. It is obviously impossible to close up the burrows and nests in the open fields, and in homes it is even more impractical, because cyanogas is dangerous to human beings and unless the inhabitants can be excluded from the dwellings for a sufficient length of time, it cannot be used indoors. It is also relatively expensive, and the hand pumps with which it is applied need constant attention to keep them in good working order.

Therefore, with rat proofing and vaccination found to be more or less impractical and with various other means of rat destruction lacking in efficency, a great need was felt for a new method of rodent destruction. Antiplague workers clamored for a method that would kill both rats and fleas, that could be effective both indoors and out. Such a method is the flame thrower.

The use of the fire torch or flame thrower originated with the suggestion of two representatives of the Pan American Sanitary Bureau, working in cooperation with the Department of Health in Peru. Dr. Anthony Donovan, traveling representative, and Senior Sanitary Engineer E. D. Hopkins thought at first to use the flame thrower only to burn off the vegetation from ditch banks in order to expose the rat burrows lining the banks for treatment with cyanogas. This was found to be only the beginning of the usefulness of the fire torch. Wider applications are being developed, and experimental work has been carried out to determine the full value of this dreaded war instrument as a plague preventative. Some of the applications found to be satisfactory so far are: the burning of vegetation from ditch banks; the killing of rats and fleas in burrows; the burning of abandoned rat nests with possibly infected fleas in mud walls, stone fences and adobe walls; the killing of fleas within in-



fected houses; the killing of rats, fleas and other vermin in routine sanitation work in dwellings, warehouses and restaurants; the killing of rats in sewers; the igniting of brush fences (another favorite rat harborage in Peru); and the igniting of garbage and rubbish piles.

The use of the flame thrower in antiplague work in Peru is believed to be the first application of this apparatus in the control of human, insect-transmitted disease, as it has previously been applied to industry and agriculture and recently has been used as an instrument of warfare. The National Anti-Plague Service has tried two types of torch. One consists of a four gallon tank connected with the burner coil by a flexible rubber hose, and the other consists of a one and a half gallon tank directly connected with the coil. The first type appears to be the more satisfactory. The fuel used is kerosene. The apparatus is economical to use; in continuous operation it consumes about one gallon of kerosene an hour. According to the manufacturers, the flame produced has a temperature of 2,000 F.

Before the flame thrower was used in actual field work several experiments were conducted to determine whether temperatures sufficiently high to kill rodents and rodent fleas could be quickly reached in rat burrows. An artificial burrow was used, and a temperature of 392 F. was reached in one minute, the temperature being taken in the burrow at a point 10 feet from the flame. Since a temperature of 125 F., even if lasting for only a few seconds, is sufficient to kill practically any form of insect life in any stage of development from egg to adult, it was concluded that the method is valuable in antiplague work, especially in killing possibly infected fleas in rat burrows and nests.

The flame thrower is also effective in killing the rats themselves. The lethal effects of the apparatus do not seem to depend entirely on the high temperature produced, for rats were killed in artificial burrows when the flame was applied for only a few seconds and the temperature at the point in the burrow where the animals were caged did not rise more than a few degrees. Autopsies were performed on these rats, and findings showed that they were killed by carbon monoxide poisoning or oxygen deprivation or a combination of the two, rather than by the effects of heat.

In spite of the high inflammability of the buildings in which it is used, the flame thrower is surprisingly flexible in its use in dwellings. Bearing in mind the fact that one of the industrial applications of the apparatus is burning paint from wood, Dr. Donovan and Mr. Hopkins had no difficulty using the torch in wooden or bamboo buildings or in those made of "quincha," an interlacing of cane with mud filling. They found that when the flame was passed slowly but steadily over

wood, bamboo, cane and similar materials, spiders, bed bugs, fleas, cockroaches, lice, lizards and any other living thing on the surfaces or in the cracks and crevices of the walls and floors were almost instantly killed, without any detectable damage to the structures.

Dr. Donovan and Mr. Hopkins are confident that their flame thrower will prove to be useful not only in the control of bubonic plague but also in combating other infections transmitted by insects and rodents especially when the transmitting agents pass at least a part of their lives in crevices in the walls and floors of human habitations or in the nests or burrows of animals, where the flame thrower can be used effectively in making a direct attack.

Thus science and medicine are indebted to war for the use of a new instrument in the long battle against bubonic plague and other infectious diseases, including Chagas' disease, relapsing fevers and endemic typhus fever. If the effectiveness of the flame thrower lives up to the expectations of its sponsors, the lives it will save in centuries to come will help compensate for its part in war.

War and the Antivivisection Racket

(**Continued from page 413**)

the field today without making use of the knowledge and the curative agents derived from laboratory animals. The progress which can be measured from the time of each war to the next is dramatic and undeniable in terms of life and suffering saved.

Incredible as it may seem, this continuous war against disease and death has its fifth columnists, who conspire, spread false propaganda, sabotage the effort in every way and fight to suppress it. The term vivisection, which no scientist today applies to his work, is employed by these enemies as a term of prejudice and opprobrium, and accordingly they call themselves antivivisectionists. They wage a ceaseless and well financed campaign of open attack and secret sniping, of agitation to prohibit experiments on any animals, or sometimes on only the dog, and of schemes to gain power for their representatives to supervise experimentation—the actual intent and desire being to abolish all such investigation as far as possible. One present example is the so-called Crawford bill, now pending before the New York state legislature. This proposal has been introduced in the midst of war, when the life-saving benefits of animal experiments (particularly on dogs) are plain and undeniable as previously explained. So far as these fifth columnists hinder or delay this work, they kill sick patients and wounded soldiers. This statement is not rhetoric or hysteria; it is plain, demonstrable truth. Ordinarily the public would take little heed or be deceived with the usual ease. But now, when so many persons have a direct and vital interest in some soldier or sailor at the front and when so many others are furnishing blood plasma to save wounded men by a method derived directly from experiments on dogs, they feel a keener appreciation, a more direct responsibility and a more urgent desire for further advances in treatment. Therefore they should act with indignation and energy, not only to punish any political representatives who may pander to this subsidized hysteria but also to overthrow the entire vicious, entrenched antivivisection evil!

This is the first of two articles by Dr. Allen. The second will appear in HYGEIA next month.—Ed.

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By Joseph Felsen, M.D.

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QUESTIONS AND *Answers*

Mental Illness in Tuberculosis

To the Editor:—Could a condition of involuntary melancholia, dementia praecox, or manic depression develop from active pulmonary tuberculosis through a toxic poisoning of the nervous system?

Would the tuberculous condition have to be minimal, moderate, or far advanced to develop sufficient poisoning to affect the nervous system to a degree as to bring about any of the foregoing mental disorders?

W. B., Illinois.

Answer.—Tuberculosis is a unique disease which usually progresses to an advanced stage without causing pain. But freedom from pain does not indicate an absence of effect on the patient. The toxins seem to cause increased cerebral activity which in the presence of a painless though wasting disease sometimes is reported to result in marked mental changes. One of these changes is an increase in mental activity and productivity, which has been described in interesting monographs by Munro and Moorman. In some people the toxins are reported to cause a profound cerebral stimulation in the early and early advanced stages of the disease. When the terminal stages of the disease develop, many psychoneurotic manifestations may appear. The most characteristic and common is the "spes phthisica" which frequently buoys the patient up with hopes of recovery even until the last breath. Another resembles the "stir crazy" syndrome of penal institutions.

While extreme emaciation and toxemia apparently will warp any mind irrespective of its quality, the question of tuberculosis causing the three types of psychosis mentioned in the query is extremely doubtful. Whatever may be found to be the causes of true psychosis (bacterial toxins, poisonous metabolic products, hereditary factors, etc.), it would seem that a tuberculous toxemia alone does not produce them. As a proof of this contention the psychoses developing in tuberculosis hospitals are much less than those developing in the population at large. While it is true that tuberculous patients may develop psychosis before the diagnosis of tuberculosis and after the arrest of the disease, in both these phases of disease the mind is little affected by the disease itself. The experience of competent authorities, therefore, is that the existence of the two diseases when found together is coincidental, and they do not recognize any special form of tuberculous insanity.

Obviously, this discussion has no bearing on the majority of the tuberculous insane who develop tuberculosis largely from exposure to other patients in mental hospitals. The tubercle bacillus is no respecter of persons, especially in large and uncontrolled dosage.

Another small but definite group to be excluded are those having organic lesions in the brain in the form of tuberculomata which may produce syndromes simulating almost any cerebral involvement according to the location of the lesions.

Light Reflex

To the Editor:—How much time is required between the time light strikes the eye and the resulting nerve reaction to the brain and back to the eye, causing it to close or blink?

J. R., Illinois.

Answer.—When light is thrown into the eye, the pupil contracts. This is called the light reflex. It consists of an impulse generated by light striking the retina and the impulse being transmitted over a set of nerves to a synapse, or junction point. At the synapse the impulse is routed over another set of nerves to the pupil, where it causes a circular muscle to contract, thus narrowing the pupil. Normally, it has been found that the pupil contracts 0.04-0.06 seconds after light strikes the retina; however, as long as 0.1 seconds may be required for complete contraction. Reflex action is so rapid that scientists studying them have had to use a thousandth of a second, or a *sigma,* as their unit of measure. Fatigue, malnutrition, drugs, alcoholic liquors, diseases of the central nervous system and other causes will delay and even abolish the light reflex.

Weakness After Lunch

To the Editor:—Why is a person affected more by weakness and sleepiness after a noonday lunch than after an early breakfast, in spite of the fact that the foods taken are almost alike at both meals and approximately equal in quantity?

A. H., Michigan.

Answer.—There are several explanations for the feeling of weakness and sleepiness after the noonday lunch. First, the period of time between breakfast and lunch may be so long that the person is naturally tired. Second, the amount and character of the morning work may cause normal fatigue and weakness by noon. Third, these two circumstances described above may combine to cause a reduction of the blood sugar at noon. It is well known that at least one-half hour is needed before the foods of an ordinary meal will be absorbed to such an extent that the blood sugar is again raised to its normal limits. Fourth, the nutritive value of both meals may be insufficient for the work the person is engaged in. For example, the continental breakfast of black coffee and rolls supplied only the calories contained in the rolls. Many American breakfasts are largely carbohydrate foods that supply ready energy but do not give a sense of satiety after an hour or two. Too many people eat a small, hurried breakfast and lunch and suffer a nutritional deficiency until the well rounded evening meal is eaten.

Cold

(Continued from page 434)

later, the patient was sitting up in bed reading a newspaper and smoking a pipe.

"Refrigeration anesthesia" is becoming routine practice for amputation in cases of diabetic gangrene. Because victims of this disease are usually advanced in years, they are not considered good operative risks. But Dr. H. E. Mock reports to the Chicago Surgical Society that mortality following amputation in severe cases has been reduced to 6 per cent when the "cold treatment" is used.

The basic reason for the effective help given by ice in such a case is very simple: *Cold slows down all the processes of life.* Dramatic illustration of this: A man whose whole body is being cooled takes four days to grow the same length of beard that a man at normal temperature grows in twenty-four hours.

In any operation, the shock produced by the body's own poisons is one of the chief dangers. When a part of the body is thoroughly chilled, it produces less of the poisons that need to be thrown off. Not only are the nerves numbed—which happens when an anesthetic like ether is used—but all the flesh surrounding the nerves is numbed and inhibited as well. Ice surgery not only dulls the nerves that carry the bad news; by slowing down the chemical chain of events it prevents some of the bad news from occurring at all. And as bacteria are also living creatures, cold inhibits their growth and spread through an infected wound. Of course much of what happens remains to be explained, but enough is known to show that we are on a trail that may lead to new and exciting territory.

Like many another trail in the annals of medicine, this one was stumbled on several times in more than a century by various isolated, curious-minded physicians, and then abandoned. Almost a hundred and fifty years ago Dr. James Currie of Liverpool, England, induced a healthy young man to sit in cold brine for three quarters of an hour. His temperature fell to 83 degrees, but it did him no harm. A few years later Dr. Currie had

(Continued on page 463)

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The Use and Misuse of Prescriptions

(Continued from page 425)

ailments or other patients. When administering medicine to a sick person, one should be sure to have the right bottle and read the directions on the label carefully. If necessary, it should be taken into another room where there is better light and no disturbance. When measuring out medicine, the attendant should pay strict attention to the act and not attempt to heed other demands at that time. A standard medicine glass—not just a spoon—should be used for measurements. If liquid is prescribed, the bottle should be shaken thoroughly before each dose.

When a prescription is no longer of use to the patient, it should be discarded. There is nothing to be gained by keeping a bottle of medicine that was compounded some years ago for a kidney ailment, an eye affliction or an intestinal upset. The active ingredients of that prescription, especially if it is in liquid or ointment form, may have lost their therapeutic value; furthermore, any new or similar appearing condition may require a different medicine. This is particularly true in view of the ever increasing knowledge of medical therapeutics.

In these days of common sense prescription writing and use, some of the older treatments which were employed by patients with real faith in the promised result may still be remembered. According to a popular drug trade journal, one proposed cure for chickenpox which was prevalent in certain parts of the country a good many years ago was to wait until the chickens had come home to roost, then set the patient in the door of the chicken house. The chickens were then chased out over the patient and were supposed to take the disease with them! Another old practice was for a person who felt a chill coming on to act as though he were going to get into bed and then suddenly dive under the bed—hoping that the chill would pass by. We may laugh at these superstitious practices, but they are no more extreme than some of the present day practices involved in self medication.

Of course, all self medication is not objectionable. Obviously, a person cannot and should not run to a physician with every trivial complaint. There are a number of instances in which useful remedies and first aid measures should be used, but it is extremely unwise, and often dangerous, to attempt to treat prolonged infections, persistent headaches, severe abdominal pain, diabetes, eye disease, cancer, high blood pressure, kidney disease, rupture, tuberculosis and other ailments of a serious nature. Too often people think they are ill because of things they have read or heard, when actually they are not ill at all. Drugs will be of little service in such cases; as a matter of fact, they may cause much damage and subsequent serious illness. No drug should be taken without a physician's advice if it contains habit-forming or dangerous ingredients. No serious disease or persistent symptom should be self treated.

Self diagnosis and self treatment cause enormous annual losses of money, unnecessary pain and grief and often death. Millions of dollars are spent needlessly when nothing is physically wrong with people and when something is seriously wrong but proper medical advice is sought too late. It is well to remember that the harmful effects of drugs do not come from their use under proper medical supervision but from their indiscriminate use. In these days few people can afford to throw away time or money on unnecessary illness, yet that is what they are doing when they misuse prescriptions. As a general rule, only the simplest therapeutic procedures should be carried out without professional advice. Any unusual or disturbing symptoms should always be a warning for competent medical advice.

Facts About Urology

(Continued from page 415)

kidney is free from infection and has good function.

Any instance of blood in the urine, whether it is visible to the naked eye or is found by microscopic examination, should be promptly referred for urologic diagnosis and treatment. There is no specific medicine to stop urinary bleeding, which often stops spontaneously, even without treatment. This should not lull one into a feeling of security and defer examination. The chief and most important reason for prompt urologic study is to make certain that a cancerous growth in the urinary tract will not be overlooked. Due emphasis must be placed on cancer in the interest of the patient, because cancer here behaves the same way that it does in any other part of the body. The sooner it is discovered the greater the chance of its eradication. It is possible to discover early cancer by complete and repeated examination. Prompt surgical removal prevents the spread of cancerous cells to other parts of the body. Statistics show that such persons may be free of symptoms and may live and work for years after the operation.

Blood in the urine, even to an alarming degree, fortunately does not always arise from a cancerous growth. It is common clinical experience to see urinary hemorrhage in middle aged and older men arising from a noncancerous enlargement of the prostate gland. This bleeding ceases after the surgical removal of an enlarged prostate. In younger persons, different degrees of bleeding may arise from a noncancerous growth within the bladder. Such growths may readily be destroyed by use of a cystoscopic instrument. Another common cause of urinary bleeding is stone in the urinary tract. Stones, sooner or later, are associated with infections, and the bleeding is caused by erosions of small blood vessels and of the delicate lining of the urinary channels. Urinary stones vary from the size of a pinhead to the size of a fist; they may be smooth or rough and are located inside one or both kidneys or in the bladder. As a rule, the smaller stones tend to dis-

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lodge themselves and pass out, bringing severe and distressing colicky pains; large stones are impacted within a kidney or rest in the bladder, but are less frequently associated with pain. Many large stones are discovered because an x-ray examination is made after pus or red cells are found in the urine. There are many other causes for urinary bleeding, and it is the urologist's function to evaluate and differentiate the symptoms and findings in each particular case and arrive at a final diagnosis.

It should be remembered that the condition of the genito-urinary tract depends on general health and general resistance to infection; that bacteria may reach the urinary tract from chronically infected sinuses, tonsils and gums, and even from remote foci like boils or carbuncles on any part of the body; and that foreign bodies and mechanical obstructions must be removed. The family physician is usually the first person consulted when symptoms occur. On him rests the responsibility to advise complete urologic examination for the early detection and treatment of abnormalities. Health can be restored and life prolonged if the public is educated to seek such early diagnosis and treatment.

Industrial Health

(*Continued from page 417*)

antiquity. The inconceivables of only two years ago are today's realities. The war is compressing into the space of months developments which might have taken us half a century to realize, if necessity had not forced the pace.

More than a century was consumed in bringing the production of crude rubber up to a million tons yearly. The United States alone is now undertaking to accomplish almost as mighty a feat in less than two years by the manufacture of chemical rubber from petroleum, alcohol, coal and limestone. By the end of 1943, our production of aluminum will be at a rate seven times greater than that of 1939 was after fifty years of development. To produce this aluminum will require more electricity annually than was consumed in 1940 in twenty-seven of our forty-eight states. The nation will emerge from this war with capacities for making plastics, synthetics, fibers, nitrates, hydrocarbons, high octane gasoline and literally scores of chemicals and other raw materials on a scale that only two years ago was beyond our comprehension.

We will have glass that is unbreakable and glass that will float, wood that won't burn, shoes that contain no leather, window screens that contain no wire and machinery bearings that contain no metal. Today's automobiles will be a joke. We are now in the 1960's of motor car development—no more radiators to freeze; weights half what they are now; fifty miles from a gallon of fuel. House construction will be revolutionized by the use of materials requiring no maintenance; lighting will be automatic, governed by electric eyes sensitive to outside variation; air conditioning will be universal, filtering out the pollens of hay fever and asthma; developments in medicine will outweigh by many times the staggering losses of the worldwide conflagration.

I am not one of those who believe that we will be bankrupt and ruined when this war is over. I am convinced it will be a better world. I think we shall realize the four freedoms of President Roosevelt: Freedom from want, freedom from fear, freedom of speech, freedom of religion—provided we keep the other freedom mentioned by Herbert Hoover: Freedom of economic enterprise.

Professional people, management and workers will be in a different world. Our thinking, our work, our recreation and our home life will be different. New occupational diseases will appear, old ones will disappear. New methods of prevention and treatment will come. Laws that are satisfactory today will be obsolete. Industry is dynamic, ever changing.

Management knows this and is fully awake to its responsibility. It knows that it pays dividends to do the honest thing, the decent thing and the efficient thing. The greatest asset of a people is their health. What good will this new world be unless we are a healthy people?

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7. LAMP IS POORLY PLACED. Better move it to that table where Mother is sewing.
8. DUST AND DIRT ON LAMP BOWLS and bulbs can waste half the light you pay for. Clean them regularly. Pity to waste half the light from G-E MAZDA lamps when precious eyes need it!

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GENERAL ELECTRIC

YOUR CHILD AS A POSTWAR CITIZEN

By RUTH E. BECKEY

YOUR CHILD will be part of tomorrow's postwar democracy. Is he receiving now the training and attention necessary for the building of a future democratic citizen who will be capable of aiding stabilization of the new world order?

Early childhood experiences usually determine whether adulthood will be satisfactory in physical and mental health. Will your child, as a result of some of his present experiences, become one of the future unemployables, one of the psychotic patients, or any one of the other types of social misfits? Our future democratic society will be only as strong as our children are today!

Although the physical health of the child is receiving far more attention now than in former years, there are still many children of low income groups without adequate medical care. It is estimated that in small towns about half the sick children of families with incomes less than $1,000 a year receive no care at all from doctors. The same is probably true of the country child. In order to make a true democracy, each child must receive physical aid when he needs it.

In addition to a strong body, the child must have strong emotional stability to develop into the type of citizen you want him to be. According to WPA reports, two types of personality patterns existed among the children of their nursery schools. The first type was a shy and anxious individual. This child, as an adult, would prove a problem in a democratic society in which people more and more do things together. The other type of child was a hyperactive person who reacted to frustrating attempts with aggressive actions. He tried to get what he thought belonged to him. This little fellow is likely to become the future gangster of America.

Your child needs certain emotional satisfactions if he is to become a well balanced adult with no feelings of frustration. In the first place, your child likes to be loved. He wants to be cuddled, and he likes you to tell him that you love him. Your child will also want you to help him if he is in pain or uncomfortable. He likes attention. Even though he is not physically uncomfortable, he wants you to make some fuss over him. A moderate amount of attention will not spoil the child; it will only help him to grow emotionally strong.

This child of yours wants to feel that he belongs to you. You can help him to feel that you want him

by accepting him, by loving him and by standing by him when he is in trouble. He needs to feel that you are for him. Moreover, he will feel that he belongs to you if your home is harmonious; no emotional tension should exist between his parents.

If he feels rejected or that he does not belong to his family, he may develop unfavorable symptoms of insecurity. In one family, the son feeling insecure began to stutter. He was 12 years old when he came to the speech clinic for help. It was found that he felt the lack of a father's companionship. His father had left his mother when he was a small boy. Not until the child was 6 years old did the mother tell him about his father. At that time, she merely told him that the father was not much good. He missed his father, especially when he went fishing and hunting. He began his stuttering about the time he learned about his father.

Your child will also desire certain bodily sensations. He will like to suck as a baby; he will like to be cuddled close to your body; he will like to eat when he is hungry without having to wait until the book says it is time to eat; and he will want to feel comfortable.

As a child, your boy or girl will want to sense feelings of achievement or accomplishment. He will want to express himself through speech and physical feats. If he is unable to talk, he may develop temper tantrums and use his hands violently. He will want to explore his environment. He works and works at some little activity, and then when he finishes it he turns to you proudly and wants you to notice how well he did it. He wants your recognition.

Without any of these emotional requirements, your child may develop some personality deviation which may be harmful to him as a future citizen of the postwar democracy. Experiences of frustration during childhood make for insecure adult emotional life.

Educationally, your child may not be allowed to explore as much as he would like. In almost every child is a desire to seek adventure. In order to meet new situations or adventure successfully he must be alert and imaginative, as adventure means new and different problems for which he has not been trained. Is your child left alone too much?

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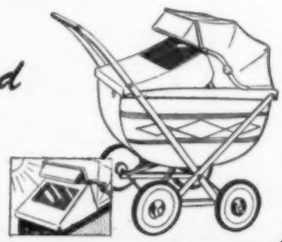

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GUARANTEED REPLACEMENT
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He needs others around him if he is to learn about society. Often the baby is left in his crib by the hour. He wants and needs stimulating experiences. Sing to him! Play with him! He must have contacts with other people if he is to learn how to live with them.

Not only does your child have to meet the demands of people in his environment, but he must meet the situations which arise as a result of the physical surroundings in which he finds himself. For instance, he may live in a fairly simple environment, such as the country. In this case, he may not have so many problems to solve as the city child who is always dodging cars in order to save his life. The child in an extremely cold climate may develop responses as a result of his living in such climate; whereas his cousin in Central America will not need the same responses because of his entirely different climate. Dress, shelter and food would be different.

The primitive boy had simple problems of adjustment, as society did not demand as much of him as it does of the modern child. His main problem was to help with the daily tasks of making a living. A complex society makes complex problems for its children. Your child must be able to fit in any emergency in the postwar world.

To know the world, your child must see it, touch it and hear it. Outdoors, he sees, hears and feels nature. He learns to understand natural phenomena. From nature he gains something that the scientist, the gardener and the artist have. In the mechanical world, he may learn how to manipulate machines. He should know the dangers of the machines—how to use them effectively. He needs to know that machines are constantly changing, that after the war, new cars will be made, different from any we have ever seen. He must be ready for changes of all kinds. His understanding of machinery must include an evaluation of its importance to his daily standard of living.

In the propaganda world, the child has the radio, the newspaper and the movies; although most of these do not disturb the young child. Radio is not of much interest to the child under 7 except as a mechanical toy capable of making many types of noises. However, he should learn not to turn the radio on except when he wants to hear a special program. When radios are allowed to run irrespective of programs, little respect is developed for the spoken word. As your child grows older, he may react to public speakers in the same careless way that he has learned to listen to the radio.

If your child is very young, the newspaper will mean little to him except for the pictures. Unfortunately, many of the cartoons are not for him. As he grows older, he should be encouraged to give authority for all his statements of fact. This habit will prevent spreading false facts.

Movies really should not enter the child's life until he is older than 7 or 8. The child wants to act life and not to see it. Your backyard is the scene of a drama almost every day. Moreover, no child can sit still through two or three hours of movies. However, as the child matures and sees the local movie, he is going to be subjected to a new form of teaching. Guidance by parents should be given—what show to see and what show not to see. Some magazines have such a guide already worked out for you.

One of the important factors in the promotion of a future democracy which is strong is the stabilization of the economics of the country. Why should millions of children under 14 in our country be underprivileged? Most of their parents are too tired or too bitter to be concerned about the emotional future of their children.

Now, what to do? One of the first procedures should be the organization and establishment of nursery schools for all working mothers and child guidance clinics for any mother wishing expert help with physical, psychologic and environmental problems. England has had about ten child guidance centers established since the beginning of the war. But why should we wait for such centers when we need them now? What if your child were the son of a factory worker in Ohio, the son of a sharecropper in Arkansas, or the son of a miner in Virginia? Wouldn't you want something done now?

If you are to build for a strong future democracy you will not only have to supply the physical and emotional needs of your own children, but you will have to do all you can to bring equality of opportunity to the nation's children!

(Continued from page 455)

a violent lunatic thrown repeatedly into a cold bath. He came out of it rational, and remained so. Larrey, one of Napoleon's surgeons during the retreat from Moscow, noticed that intense cold made amputations almost painless. A generation later another English physician, Dr. James Arnott, had such success with cold as an anesthetic in surgery, and as relief for the pains of neuralgia and lumbago, that he wrote a book extolling the medical virtues of "Benumbing Cold."

There were few footsteps on this trail again until 1938, when Dr. Temple Fay and his associates at Temple University, Philadelphia, showed how much more cold the human body can stand than was thought possible. Dr. Fay felt that his attempts to slow the growth of cancer cells by localized icing were promising enough for an experiment in cooling down the whole body. It was unheard of, untried and perhaps extremely dangerous. So his subjects were volunteers already doomed to die of cancer within a few months.

One of these anonymous heroes was stripped, put to bed, and packed in crushed ice up to his chin. It was December, and Dr. Fay flung wide the windows to let in floods of cold air—and new knowledge. The volunteer's temperature quickly fell to 90 degrees, and was held there for 18 hours. He was successfully warmed back to normal again. Not all the other patients were equally lucky, and hypothermia of the whole body is still considered highly risky, even in expert hands. A second volunteer stayed at 90 degrees for four days. With constant checking of pulse and temperature, with gradual improvements in technic, the temperature of later volunteers was pushed down further still. The further down it went, the drowsier became the patients. Few of them could remember afterward what they had been through. A number of them seem to have been relieved of their pain for weeks or even months.

As far as curing cancer is concerned, this semi-hibernation, or hypothermia, as physicians prefer to call it, has been a failure. But Dr. Fay took a bold step into the unknown and worked out a technic with which others may find the answer to many stubborn riddles.

Meanwhile Dr. Frederick M. Allen of New York had been following another trail into the unknown. His experimental work had taught him the profound chemical why's and wherefore's of the rule pounded into every first aider: loosen a tourniquet frequently. In hundreds of laboratory animals he had seen how the release of a tourniquet, if held tight too long, also releases poisons that produce shock, and death. He had observed that the degree of shock could be controlled by changing the temperature of the bound limb. The lower the temperature, the lower burned the fires of life's chemistry. Therefore fewer waste products were piling up behind the dam of the tourniquet, demanding to be removed.

Dr. Allen applied a tourniquet to the hind leg of a rat, and iced the leg almost to freezing. The chilled, bloodless leg survived almost fifty-four hours—or ten times as long as it would at normal temperature —with the tourniquet in place. Further experiments by Dr. Allen eventually led Dr. Crossman and his associates to do their pioneering at New York's City Hospital.

Surgery and anesthesia by refrigeration are so new, and in all but a few applications so untried and experimental, that we do not yet know whether they can be useful in time of war. But one thing does seem fairly certain: in case of shock—and most war wounds involve shock—the time honored use of heat is a mistake. Says the *Journal of the American Medical Association:* "External heat makes the shock patient appear better but probably lessens his chances of recovery."

English physicians are now studying the medical use of ice, particularly as it may apply to bombed civilians. Many people, trapped by fallen débris in the great raids on London, were dug out apparently well and cheerful, only to die inexplicably a few hours later. It is believed that the poisons stored in a trapped limb, when suddenly released, brought on a fatal shock. For such cases, the *Lancet* suggested, the remedy might be to apply hypothermia and a tourniquet, even though there was no wound and no bleeding, so that the toxins in the trapped leg or arm could be inhibited, and released more gradually into the rest of the body.

But here is one medical use of cold which is definitely valuable in time of war:

Early in 1941 a famous British warship was sunk off the northern coast of Norway. The survivors took to life rafts shaped like a doughnut, with an open lattice across the hole. For several days the men sat huddled around the edge of the raft, their feet bathed in icy water. When at last they were rescued, the crews of the trawlers which picked them up hustled them below deck and quickly warmed their numb and swollen feet before the galley stove. This mistaken kindness was disastrous. Some of the sailors developed gangrene, and only amputation saved their lives. The luckier ones were in hospital for a long time.

Incredible as it may seem when one thinks of how many thousand sailors were torpedoed in the last war, the correct way to treat "immersion foot" was worked out only recently, by three medical officers of the Royal Canadian Navy—Surgeon Commander D. R. Webster and Surgeon Lieutenants F. M. Woolhouse and J. L. Johnston. Once again, medicine's chief ally turned out to be man's old enemy, cold.

When a foot that has been chilled and numbed for days is too suddenly warmed, the half-deadened cells on the surface wake up and yell for the oxygen carried by the blood they have so long been deprived of. But they can't get it, because the little vessels near the skin have been injured by the cold, and are therefore unable to circulate the returning blood. The result is inflammation, blisters, intense stabbing pain. The remedy is to keep the foot cool, and thereby hold down the tissues' demand for oxygen, until the blood vessels have recovered enough to be able to supply it.

Now, when a man with "immersion foot" is hauled out of a lifeboat, half frozen, often barely able to walk, medical science knows what to do with him: Put him to bed and warm his body, but not his

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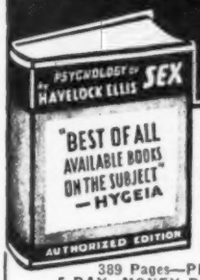

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feet. Keep his feet exposed and raise them above the level of his heart. Even gentle rubbing or massage is dangerous. Cool his feet, sometimes with icebags, sometimes with air from an electric fan, for days or even weeks. This keeps pain and the danger of gangrene at a minimum. One sailor, whose pains returned when the cooling system failed, obtained relief by sticking his feet out of the window.

This new treatment is now recommended by our Navy. When generally understood and applied, it will prevent countless tragedies of the sea in wartime.

For its first steps, medicine depends largely on experiments with animals. In this field also, hypothermia offers new possibilities. Fishes, frogs and snakes, being "cold-blooded" to begin with, can be anesthetized long enough for an operation simply by putting them in crushed ice for 15 minutes. Dr. Carroll A. Pfeiffer, while working in the Zoological Laboratory of Iowa State University, tried to use ether in order to transplant the sex glands of newborn rats. But three out of every four died. Then he put the baby rats in a small glass dish, and shut them up in the freezing chamber of an electric icebox. In less than forty-five minutes, the tiny rats were unconscious, and he operated on them without any trouble. Their heart action had all but halted, and there was almost no loss of blood. After a short time in a warm place, they woke up and were as active as ever. Since they did not smell of ether, they were not killed by the mother, as often happens if she finds that her babies smell of some foreign substance. Using ice anesthesia, the mortality was only 6 per cent.

Cold may prove valuable in the treatment of burns. Rats under deep anesthesia were severely burned, then some of them were stored at a temperature of 99 F. All these animals died. Another group was stored at a temperature of 75 F.; of this group *only 25 per cent died.* Physicians feel that this experiment demonstrates the beneficial influence of even a moderate degree of cold on the body's reparative processes following severe burns.

More remarkable even than these examples of how cold can save life by arresting life processes are some recent experiments which arrest not only life but time itself. They were made at Clark University, Worcester, Mass., by Dr. Hudson Hoagland and Dr. Gregory Pincus, and suggest that something almost too fantastic for H. G. Wells may become a reality.

Dr. Hoagland is widely known for his studies of time as a factor in life's chemical laboratories, and Dr. Pincus is famous for his "fatherless rabbits"—the products of chemical stimulation of the female rabbit's sex cells. Their work with spermatozoa stems from that of Dr. Landrum B. Shettles of the Department of Obstetrics of Johns Hopkins.

In 1940, Dr. Shettles placed human male sex cells—spermatozoa—into tiny glass capsules, and used liquid air to freeze them at 110° below zero Fahrenheit. Warmed up after seventy days of supercold storage, a few of the cells were found to have survived. Ordinarily such cells die in two or three days.

Using a variety of technics, Drs. Hoagland and Pincus finally hit upon one which gave results that dizzy the imagination. When plunged into liquid nitrogen at 319° below zero, the spermatozoa froze so quickly that their cell structure was not damaged. When warmed up again, 30 to 40 per cent of them—in one test as many as 67 per cent—were still alive.

How long would human seed, thus frozen, remain alive? The answer given by these two scientists illuminates the future of human genetics like a blinding flash of lightning: *"We would expect them to do so indefinitely."*

What if they are right? What if it should prove possible to store human inheritance for decades, for centuries? What if frozen spermatozoa were found to be capable of conceiving new life generations after their begetter was dead? This would indeed be the strangest of the new doors to life unlocked by cold. It would mark man's first genuine victory over time.

BOOKS ON HEALTH

Marriage—Before and After

By Paul Popenoe, Sc.D. Cloth. Price, $2.00. Pp. 211. New York: Wilfred Funk, Inc., 1943.

Successful marriage, says Dr. Popenoe, is the sum of many successful relationships covering a

wide range of physical, psychologic, economic and social considerations, all interdependent, so that failure in any of these spheres is likely to result in failure of the whole. Satisfactory sexual adjustment depends, then, as much on satisfactory adjustments of these other aspects of marriage as on the physical attributes or adroitness of marriage partners.

Drawing on his rich experience as director of the American Institute of Family Relations, Dr. Popenoe builds a solid case—not on moral but on scientific grounds—to the conclusion that premarital sexual experience diminishes the chance for successful marriage. On the way to this conclusion, he answers most of the specific questions brought to sex and marriage counselors and physicians, particularly by the thousands of young people whom war has left stranded today in the no man's land between physical maturity and economic self sufficiency. This book is for them.

R. M. Cunningham Jr.

Hiking, Camping and Mountaineering

By Roland C. Geist. Cloth. Price, $3.00. Pp. 304. Illustrated. New York: Harper & Brothers, 1943.

In this excellent, thoroughly readable volume the noviate and the experienced out-of-doors man will find much of profit and pleasure. The book is divided into three parts. The first gives many practical suggestions to hikers, such as: choice of footwear and clothing, how to plan hikes in different seasons of the year, short descriptions of the better known hiking trails in different parts of the country, useful additional equipment for the hiker, and entertainment around the camp fire. With the curtailment of travel, this part of the book should attract many and awaken some latent possibilities of enjoyable week end excursions for the erstwhile automobile tourists.

Harold C. Lueth, M.D.

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Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through Hygeia or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

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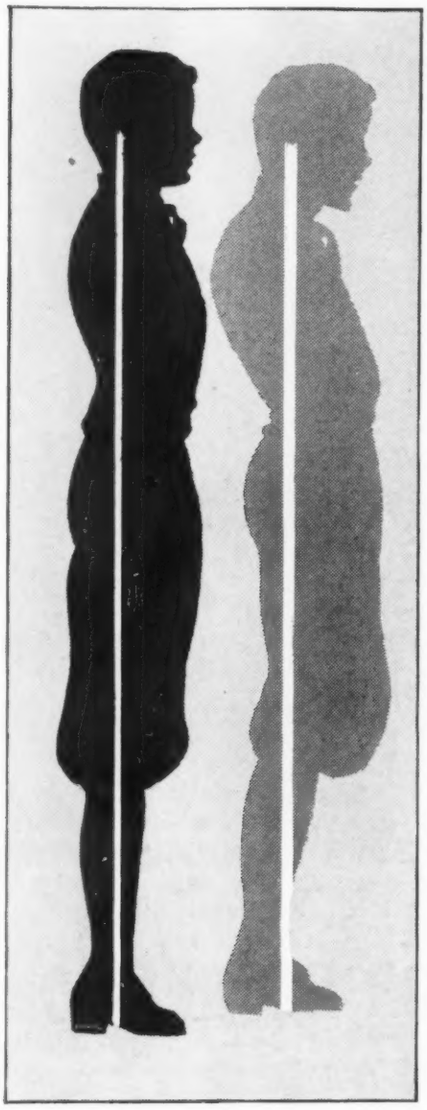

In correct posture, the tip of the ear, shoulder, hip bone, knee and ankle bone should all be in a straight line.

STAND UP FOR VICTORY!

By BARBARA K. NEWMAN and SELMA WILLIAMSON

STAND UP tall and proud, with your head up, shoulders back, hips under you, and you will be standing up for victory in more than one sense.

It will be a victory in your own personal life, because you will be more attractive to every one around you; but—more important these days—it will help toward victory for your country. This is why—good posture means good health, and good health gives you leadership and more pep and energy to "keep 'em flying," rolling off the assembly line, or whatever other victory job you have chosen.

Poor posture is largely due to muscular and spinal weakness, although usually just lazy habits and ignorance account for many posture faults. So if you know you are naturally a bit lazy, take your will power in hand and stand up straight.

If, however, your stomach protrudes and your shoulders sag because you just can't hold them in place no matter how hard you try, find out your principal posture faults and then strengthen the muscles that control posture.

For instance, you can have about eight different common posture faults. Your head and shoulders may be forward and your chest low; your upper back may be a little rounded if you have kyphosis; if lordosis is your fault, your lower back is swayed; your abdomen may be prominent, or the knees sprung back, or your spine may curve to one side or the other and give you the posture fault known as scoliosis.

It is easy to find out what your own posture fault is. Just see how you deviate from the normal good posture. What constitutes correct posture? Get a side view of yourself. If the tip of your ear, shoulder, pelvis or hip bone, knee and ankle bone are all in a straight line, you are one of the few persons with good posture.

If you don't believe your own eyes entirely, get a string with a small weight tied to it and drop it along the side of your body from the shoulder to the floor. Now see if all the above mentioned points touch the string.

The exercises for attaining good posture are few and simple. There is really no excuse for looking like a wilted American Beauty. Besides, you have a war to win, and keeping yourself tall and straight is one way of showing a fighting spirit.

Furthermore, a few exercises a day, fifteen minutes at the beginning and at the end, will pay you more dividends in the long run than you could get if you did something else during that time.

First, do some limbering-up exercises like the trunk spring (bend down keeping knees straight and bounce up and down) and the airplane twist (stand with the feet apart with arms stretched out at the sides, then twist all the way around, bend down and touch the right toe with the left hand, then the left toe with the right hand). Follow these with specific exercises to correct your own posture fault.

If you just won't admit that part of your anatomy is out of line, doing the exercises for all the posture faults can't harm you.

Here's a good exercise to help you keep your head up, and your chest as well: Sit up straight in a chair; push back against your neck and up through the top of your head; at the same time pull your chin in without exaggeration. As you pull up your head, your chest will come up automatically. Thus you will help correct a low chest—if that should be one of your faults.

What if your shoulders sag forward? Simply pull the scapulae, or shoulder blades together, as though some one were pulling them down and toward each other. Sleeping on your back without a pillow will also help to correct this fault—and the forward head and low chest, too.

Now for kyphosis, which really means that your upper back is a little rounded. The following exercises will be helpful for this as well as for correcting forward shoulders. (You see, most of the muscles controlling the posture are interrelated. You can't correct one thing without getting a beneficial effect on some other closely related muscle.) Swing

your arms forward to shoulder height, swing them backward at shoulder level as far as they will go, then swing them forward again and down. Do this to the count of four—up front, one; sideways, two; front again, three; down, four.

To correct lordosis, a swayed back, start out by standing about six inches from a flat wall. Slowly flatten yourself and your head and heels against the wall. Another exercise you might try regularly for lordosis is lying down flat on your back with the knees bent and the feet on the floor and gradually straightening your knees, but keeping feet and lower part of the back on the floor.

Will power can do a great deal to prevent a prominent abdomen, the most prevalent of posture faults, but if you want an exercise that will help your will power to keep your tummy in, try this: Lie on your back, bend knees to chest, then straighten your legs so you will look like a right angle; now try to lower the legs slowly. Once your stomach muscles are strengthened, your will power won't have to do all the work alone.

If your knees are sprung, try all these exercises, and the problem should take care of itself if every other part of your body is in proper relation. For scoliosis or a curved spine, exercises cannot help too much, but standing tall and stretching up all the time should help somewhat.

It's simple to stand up for victory! You will be doing a good turn for Uncle Sam by having more vitality for your war work. A little thing like letting your head flop forward can give you headaches because it interferes with your circulation. If you let your stomach muscles sag, you might get intestinal troubles later on. A sagging chest may make you more susceptible to colds and lead to various lung infections, as the lungs don't get enough air to function naturally. A bad case of lordosis throws the kidneys out of place and could cause kidney trouble.

So you see, good posture works out favorably all around. It gives you more health, and if you are healthy, you have a much better chance to succeed, no matter what you are doing. Stand up for victory!

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Civilian Fitness

(*Continued from page 431*)

changed if we can judge from what has already happened. If the food shortage should reach a level suggesting possible damaging effects, vitamin concentrates may become a necessary part of our rations. Should this happen, my belief is that proper guidance for the public in this respect will be forthcoming. The problem then will be to provide the vitamins.

A common problem, always present among us, is that of insomnia—failure to get sufficient rest and sleep at night. Taken the country over, this leads to the consumption of large amounts of sedatives taken to induce sleep. In most instances, in the absence of pain, failure to go to sleep in a short time after going to bed is due to failure to secure relaxation before retiring. Bed time is not the time to review the events of the day, nor the time to solve the problem of tomorrow or next week. If you have such habits they should be broken by suitable reading for a half hour, or by substituting for present events thoughts of pleasant days of long ago. Relaxation and repose, necessary for sleep, are reflections of satisfactory reactions during the day. Here again, things don't just happen. The habit of sleep, its depth and duration, varies with individual needs, but it is a component part of all of the activities that precede sleep. Your sleep tonight will depend on how well or how badly today has gone from your own point of view.

Since I have said so little up to this point about physical conditioning, you will have properly concluded that I regard the matters discussed as more important. Without a simple, effective program for daily living, physical fitness is not apt to be maintained beyond the years of youth. Most of us, especially in these days when we have found added uses for our feet and legs, get enough exercise. Great physical strength and exercise for the sake of exercise are not prime requisites for those of us who lead sedentary lives. Many forms of exercise taken for diversion are excellent, but probably for most of us a hobby, an avocation, will serve us better. For boys of high school and college age the physical conditioning programs of our schools and colleges must be stepped up rather than reduced as some have advocated. Participation in sports and team play are now serving as good preparation for a soldier's life but should be encouraged on a broader base for the peacetime future. Methods for testing physical fitness and for sorting individuals for given amounts and kinds of exercise are now taking form. For military purposes it is no secret that our boys and young men must undergo hard, toughening, physical conditioning programs. This is necessary not only because of military requirements but also as a means of saving many lives. Mental alertness, increased interest and extended capacity to meet difficult demands are products of good physical conditioning.

Today many parents are facing anxious times because of having sons in service. To offset some of this, in view of the country's need, how would you and your son feel if the latter had not joined his fellows? During my service in the last war, my mother used to tell her friends that she knew the soldiers were being well cared for. That kind of confidence in our sons and what they are now being asked to do for their country is needed by many families. I have faith that the services are doing the best they can to place young men in their most effective places. As older people, no small part of our efforts must be directed to consideration of what is to be done about the country's affairs when the war is over. The disappearance of Hitler and his immediate cohorts from the scene will be a source of satisfaction, but the common sense and good judgment of all of us will be required for the reconstruction days ahead. We have only to think of the prolonged convalescence of the country after the Civil War, and the peculiarly bad judgments we used after the last war, to realize

that plenty of courage, wisdom and fitness for difficult tasks will test our capacities to the utmost.

It is common knowledge that we are faced with a shortage of doctors and nurses, and that shortage is apt to increase before this year is over. What is not common knowledge is that if all the people of the country could learn to deal adequately with the kinds of problems I have mentioned here so briefly, we could divert 50 per cent of our peacetime doctors and nurses into more constructive fields of activity for the public good. The reason is that wrong jobs for the wrong people, lack of opportunities for work, worry, fear, economic conditions, family problems and the like produce results requiring the consideration of at least half the doctors of the country. If we are but automatons on the stage we will conclude that nothing can be done to raise our standards toward a more positive way of life, but I have faith to believe that better days lie ahead through better understanding of these matters and through better educational methods for our children.

Do not be deceived by the notion that socialized medicine or state medicine offers a panacea for our difficulties. A solution or solutions must be found to deal with the vast number of families in the low income group; the housing problem must be solved; proper work and training for such work for all capable of working is a task facing industrial and professional America; political chicanery must be reduced to the very fringes of government. Self respect would then take the place of our present feelings of insecurity. A vast amount of our present illnesses would disappear and a great proportion of our medical forces could be devoted to keeping us well. It is certain that many of our individual problems are linked with the defects of our social structure. As individuals we must do what we can to set these defects right. Great and lasting reforms do not merely happen. They are the result of hard work by realistic people whose vision of the past and the present can interpret the needs of the future. They need our support.

(This is the second of two articles on fitness by Dr. Bock. The first article appeared in HYGEIA for May.—Ed.)

Doctors at War

While armies, navies and air forces struggle and their doctors care for the sick and wounded, the battle of science and the battle of supply goes on behind the lines. Doctors must be provided for the needs of today and for the nation's requirements in the future. Medical research and discovery must proceed.

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Guest speaker: Morris Fishbein, M.D., Editor of The JOURNAL of the American Medical Association.

June 19. "Doctors at War:—Report to America"

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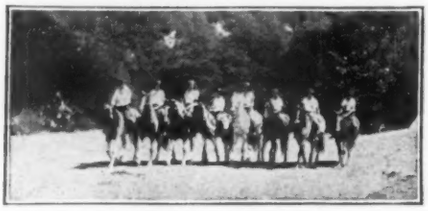

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American Medical Ass'n., 535 N. Dearborn St., Chicago

Poison Ivy

(*Continued from page 423*)

leaflets and will not harm you. Go to your library and look at pictures of these plants. The berries of both the poison sumac and poison ivy are white like mistletoe berries. Ivy leaves are a brilliant red in the fall. Not only the leaves but every part of these plants is poisonous, so that ivy poisoning sometimes occurs in winter from contact with twigs.

The plants we are discussing all contain an oily substance, called a resinoid, which clings to the skin after contact. The active chemical in this substance is toxicodendrol. After contact with the skin this irritant penetrates the outer layer and causes an inflammation of the underlying skin. For a day or two after exposure it is possible to transfer some of the free poison from its original site to other parts of the body by rubbing and scratching. This explains the appearance of ivy poisoning on parts which had no direct contact with the plant.

Ivy poisoning is most common during the summer because we're out of doors more during this season, but it may occur at any time during the year. All that is required is contact. Direct contact is of course the most frequent cause. Indirect contact through the air does not occur. Many susceptible people insist that they are poisoned by passing near the plants. They have probably touched it or touched something that has been in contact with it.

Contact with smoke from burning brush containing poison ivy is said to cause the eruption in some individuals. Dogs and other animals can carry the poison on their hair. One doctor I know carefully avoids contact with ivy but gets the eruption after petting his English sheep dog, which isn't so careful! Clothing which has come in contact with ivy can transfer the poison to persons for a limited time. Plants growing beside poison ivy may rub against it and so carry the poison on their surface. Bouquets of wild flowers have been known to carry the poison in this way.

Within twenty-four to forty-eight hours after contact the attack begins with itching and burning. This is soon followed by redness and then by the development of small blisters. These blisters may enlarge and run together or they may remain small and separate. Frequently blisters appear in rows or lines, showing where a twig or leaflet has rubbed across the skin. Primarily, the eruption appears on exposed parts: the hands, forearms, ankles, legs and face.

Itching is severe and may last several days. It usually diminishes after the blisters break. When this happens there is a moist, oozy stage which is uncomfortable and may persist a number of days before drying and crusting ensue. This is followed by loosening of the crusts, scaling, and, after two to three weeks, a normal skin.

Complications are not common in cases of ivy poisoning. Occasionally raw surfaces become infected, usually by scratching, and a pus condition of the skin results. Here the duration of the trouble will depend on the seriousness of the infection and the sort of treatment instituted. Sometimes recovery is delayed for a long time. Aftereffects are rare. If there has been a good deal of rubbing and scratching, temporary pigmentation may be noticed.

A doctor's wife consulted a dermatologist recently. She said she didn't know whether she was having ivy, oak or sumac poisoning and thought he could tell by looking at her eruption. She had ivy poisoning, but the doctor couldn't tell that from her eruption. He had to question her about where she had been—she hadn't been near a swamp so she didn't have sumac poisoning, and since she had been only in her own Englewood, N. J., back yard her contact was almost certainly ivy and not oak.

Doctors diagnose ivy poisoning partly from a history of probable exposure—a picnic, a camping or fishing trip; partly from the location of the eruption—on the exposed parts; partly from the elapsed time since probable contact; and partly—when there are blisters—

by finding some of these arranged in a line. There is nothing absolutely characteristic about the eruption of ivy poisoning. Many other irritants can cause similar blistering eruptions and there are one hundred and twenty American plants which can cause a dermatitis. Blisters are evidence only of a very rapid reaction of the skin to an irritant.

Many treatments are advocated for ivy poisoning. All treatment may be divided into two classes: the preventive treatment and the treatment of an attack.

The best preventive is to avoid contact with these plants. If your work or your own wishes send you where poison ivy grows, considerable protection can be had by covering the skin with a bland oil or grease before starting out. On your return, get under a shower and wash off this protective oil thoroughly with soap and water. A shower is preferable because ivy poison will float on the surface of water, sometimes causing a ring of dermatitis around the body at the water level when a tub is used. After the bath, the skin surfaces which were exposed while outdoors should be sponged with rubbing alcohol. It is best to use one piece of alcohol cotton on one area only and then discard it and use a new piece for the next part. This rather simple procedure is used by many outdoor people, and they are able to go where they please if they do this regularly.

Some immunity can be obtained by preventive treatment before the outdoor season begins. There are a number of ways of doing this, and different persons obtain varying degrees of protection. No one is entitled to feel that complete protection from ivy poisoning results from such treatment. The protection obtained is not lasting, so that treatment must be repeated every season. However, many susceptible people who have had preventive treatment go through a season with either no attacks or only mild ones. Therefore, in many instances preventive treatment is well worth while.

These treatments depend on the use of gradually increasing doses of extracts of poison ivy. The doses are given either by injections into a muscle or by tiny doses taken by mouth. The injection treatment can be given only by a doctor, and treatment by mouth should never be undertaken except with a doctor's supervision.

The treatment of an attack of ivy poisoning must be related to the duration of the eruption, because a treatment useful in one stage may be uncomfortable and harmful in another. When itching, burning and redness have just been noticed, repeated cleansing of the skin as previously outlined is valuable, since this helps to remove any free poison present on the surface. Two or three cleansings each day, for the first two days, are useful. After that time, no additional benefit is likely to be obtained.

Ivy poisoning is a blistery eruption, and usually one or two days after the first discomfort is noticed blisters are present. Since some of these are likely to break open, cold compresses or, better still, continuous wet dressings are useful almost from the beginning. To be helpful, wet dressings should be properly applied. The skin should be covered with several layers of sterile gauze. Over this several thicknesses of Turkish towel may be bandaged. This dressing is wet from the outside and more liquid is poured on at frequent intervals.

Such a dressing should not be covered with oiled silk or other waterproof material. The gauze on the skin surface should be changed at least twice daily, and if there is much oozing, it should be changed even more often. Half-strength boric acid solution, ordinary saline solution, a 1 to 5,000 solution of potassium permanganate or aluminum acetate solution diluted ten times all are good as wet dressings.

After two to five days of this treatment the discharge from broken blisters has usually diminished so that wet dressings can be stopped. Most of the discomfort will now be over, and while the skin is still crusted and unsightly, a simpler treatment can be used. The ordinary pink lotion (calamine and zinc oxide lotion) may be sopped on the skin frequently, or diluted milk of magnesia may be used in the same way, or ordinary baking soda solution may be dabbed on the skin. Usually, a day or two of this leaves the skin dry, and the treatment may now be changed to some simple grease like boric acid ointment or plain cold cream.

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Medical News

OF THE MONTH

High Blood Pressure Is Common

On the basis of blood pressure readings on 14,849 persons over 40 years of age, Commander A. M. Master, M.C., U.S.N.R.; H. H. Marks, Bethesda, Md., and Captain Simon Dack, M.C., Army of the United States, report in *The Journal of the American Medical Association* that they believe "The presence of hypertension at age 40 and over is so common that a mild degree can no longer be considered abnormal. Limits of normal blood pressure at these ages should therefore be raised. . . ."

From their findings the three authors estimate that 41 per cent of the male white population of the United States and 51 per cent of the female white population 40 years of age and over would be expected to have high blood pressures of 150/90 or over. It is generally considered that in the younger age groups blood pressure readings of 120/80 to 130/80 are normal. The authors estimate that, according to their findings, at the age of 50 and over, 50 per cent of males and 62 per cent of females would have blood pressures of 150/90 or over, at the age of 60 and over the ratio would be 60 per cent for males and 70 per cent for females, while at the age of 70 and over it would be 66 and 74 per cent, respectively.

Isolate Dysentery Patients

Discussing a recent report on the increasing incidence of chronic bacillary dysentery, *The Journal of the American Medical Association* warns that because of the possibility of the spread of this infection from a local community to one of the army camps all patients with dysentery should be isolated.

Atypical Pneumonia

From a study made of atypical or irregular pneumonia at Camp Claiborne, La., by a commission especially appointed to conduct an investigation of that and other respiratory diseases at the camp, it is reported that "If an appreciable number of minor illnesses are of the same origin, as some evidence now indicates, the infection must be considered to be one of the important diseases of the respiratory tract causing disability not only in the armed forces but in the civilian population." The report of the commission was made in a recent issue of *War Medicine.*

Prostitution Must Be Curbed

"If the state can call on a man for his life in this grave emergency, surely the common welfare demands that the 'right' of an infected prostitute to be at liberty while still infectious be disallowed, at least for the duration of the war," Hyman Strauss and Isaak Grunstein, Brooklyn, declare in a recent issue of *The Journal of the American Medical Association* in a report on their findings from a study of 615 women with gonorrhea who were hospitalized at the Kingston Avenue Hospital, Brooklyn.

"We feel," they explain, "that a prostitute, although treated, remains potentially infectious for approximately three months, during which time, if at large, she is a source of infection and as such forfeits her right to the benefit of doubt.

"The cure of an infected prostitute requires adequate compulsory hospitalization. Repeated offenders should be interned for the duration and compelled to aid in the war effort. If the law now does not adequately remove this public health hazard, as it does in most contagion, remedial statutes should at once be enacted toward that end. . . ."

Postwar Medical Service

(Continued from page 411)

the medical profession has recognized the utility of prepayment plans in meeting the costs of medical service. Dr. Fishbein said:

"The individual participates in the plan of his own volition after he has been shown the evidence of the desirability for the plan and its utility for him and his family. The physicians who participate do so because they wish to be affiliated with the service—not because some all-embracing octopus-like compulsive mechanism placed on the people by the state has made it impossible for him to function as a physician without enrolment in a state-controlled procedure. In a nation like ours with wide diversities of population and industry and agriculture, with a remarkable swing between per capita wealth and per capita poverty, the functions of the federal government may well be utilized toward making certain that all of the people have opportunity for suitable security against unanticipated illness. The medical profession has recognized the necessity for cooperation between the national, state and local governments with the forces of medicine, public health and welfare in the solution of these problems. However, medical decisions in matters of medical care must be made by medical men or there can be no safety for the patients. When medical decisions are controlled by economic considerations, the medical profession must have a voice in those economic factors. As the jobs and the funds available to our workers have become more profuse, workers in great numbers have abandoned sources of free and part-pay medical care to seek out their own physicians. Could there be any better evidence than the records of our hospitals, clinics, dispensaries and eleemosynary medical institutions to prove that the American worker wants to be free in the choice of his medical care?"